



ENVIRONMENTAL SERVICES PROGRAM

Accomplishments, Highlights and Summary Report
for Fiscal 2012



MISSOURI
DEPARTMENT OF
NATURAL RESOURCES

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Air Quality Monitoring Section Summary Report

In fiscal 2012, the Air Quality Monitoring Section operated up to 190 instruments (depending on the season) at approximately 50 locations around Missouri as part of a network to monitor air pollutants known to affect people's health. In addition, staff conducted special air quality studies.

The data from air instruments may be used to:

- Determine if an area meets the National Ambient Air Quality Standards.
- Determine if the public is being exposed to unhealthy conditions.
- Identify air pollution trends.
- Investigate citizen complaints.
- Determine the source of air pollution problems.
- Inform citizens of current air quality.

Accomplishments

In fiscal 2012, the section:

- Successfully collected, validated and reported data from air monitoring instruments across the state 365 days during the year.
- Assumed responsibility for operating air instruments in Springfield, St. Louis City and St. Louis County.
- Implemented the initial phase of a major upgrade to data collection software.
- Worked with Information Technology Services Division staff on a grant to submit air quality data to EPA through an exchange network.
- Installed lead samplers near Forest City.
- Prepared for installation of a near-roadway monitoring site in St. Louis.
- Discontinued monitoring in Webb City, Corridon and at the Hall Street and Mound Street locations in St. Louis.
- Conducted special sampling to support EPA's development of an additional laboratory method for lead analysis.



Air Monitoring Sites and Pollutants Monitored

Kansas City Area Air Monitoring Sites			
Site Names	County	Pollutants Monitored	Site Status at end of Fiscal 2012
Watkins Mill State Park, Lawson	Clay	Ozone	Active Mar 1 - Oct 31
Liberty	Clay	Ozone, Inhalable Particulate and Speciation (PM2.5)	Active
Trimble	Clinton	Ozone	Active Mar 1 - Oct 31
Rocky Creek	Clay	Ozone	Active Mar 1 - Oct 31
Troost, Kansas City	Jackson	Sulfur Dioxide, Inhalable Particulate (PM2.5 and PM10), Nitrogen Dioxide	Active
Front Street, Kansas City	Jackson	Inhalable Particulate (PM10)	Active
Richards Gebauer South	Cass	Ozone, Inhalable Particulate (PM2.5)	Active

St. Louis Area Air Monitoring Sites			
Site Names	County	Pollutants Monitored	Site Status at end of Fiscal 2012
Orchard Farm School, Orchard Farm	St. Charles	Ozone	Active Mar 1 - Oct 31
West Alton	St. Charles	Ozone	Active Mar 1 - Oct 31
Arnold West	Jefferson	Ozone, Inhalable Particulate and Speciation (PM2.5)	Active
Oakville	St. Louis	Inhalable Particulate (PM10)	Active
Blair Street	St. Louis City	Carbon Monoxide Trace, Sulfur Dioxide Trace, Ozone, Reactive Oxides of Nitrogen, Black Carbon, Inhalable Particulate (PM2.5 and PM10), Speciation (PM2.5), Lead, Carbonyl, Hexavalent Chromium, Volatile and Organic Compounds	Active
Branch Street	St. Louis City	Inhalable Particulate (PM2.5 and PM10)	Active
Margaretta	St. Louis City	Nitrogen Dioxide, Sulfur Dioxide, Inhalable Particulate (PM10)	Active
South Broadway	St. Louis City	Inhalable Particulate (PM2.5 and PM10)	Active
Ladue	St. Louis	Inhalable Particulate (PM2.5 and PM10)	Active
Maryland Heights	St. Louis	Ozone	Active
Pacific	St. Louis	Ozone	Active

Herculaneum Area Air Monitoring Sites			
Site Names	County	Pollutants Monitored	Site Status at end of Fiscal 2012
Dunklin High School	Jefferson	Lead	Active
Mott Street	Jefferson	Sulfur Dioxide, Lead, Metals	Active
Sherman	Jefferson	Lead	Active
Pevely	Jefferson	Lead	Active
Pevely North	Jefferson	Lead	Active

Southeast Missouri Air Monitoring Sites

Site Names	County	Pollutants Monitored	Site Status at end of Fiscal 2012
Farrar	Perry	Ozone	Active Mar 1 - Oct 31
Bonne Terre	Ste. Genevieve	Ozone, Speciation (PM2.5)	Active Mar 1 - Oct 31
Glover	Iron	Lead	Active
Park Hills	St. Francois	Lead	Active
St. Joe State Park	St. Francois	Lead	Active
Buick NE	Iron	Lead, Sulfur Dioxide	Active
Oates	Iron	Lead	Active
Fletcher	Reynolds	Lead	Active
Bills Creek	Reynolds	Lead	Active

Southwest Missouri Air Monitoring Sites

Site Names	County	Pollutants Monitored	Site Status at end of Fiscal 2012
El Dorado Springs	Cedar	Ozone, Inhalable Particulate (PM2.5)	Active
Mingo Swamp	Stoddard	Mercury Deposition	Active
Alba	Jasper	Ozone	Active Mar 1 - Oct 31
Carthage	Jasper	PM10	Active
Branson	Taney	Ozone	Active Mar 1 - Oct 31
Fellows Lake	Greene	Ozone	Active Mar 1 - Oct 31
Hillcrest High School	Greene	Ozone	Active Mar 1 - Oct 31
Missouri State University	Greene	Inhalable Particulate (PM2.5 and PM10)	Active
South Charleston	Greene	Sulfur Dioxide	Active

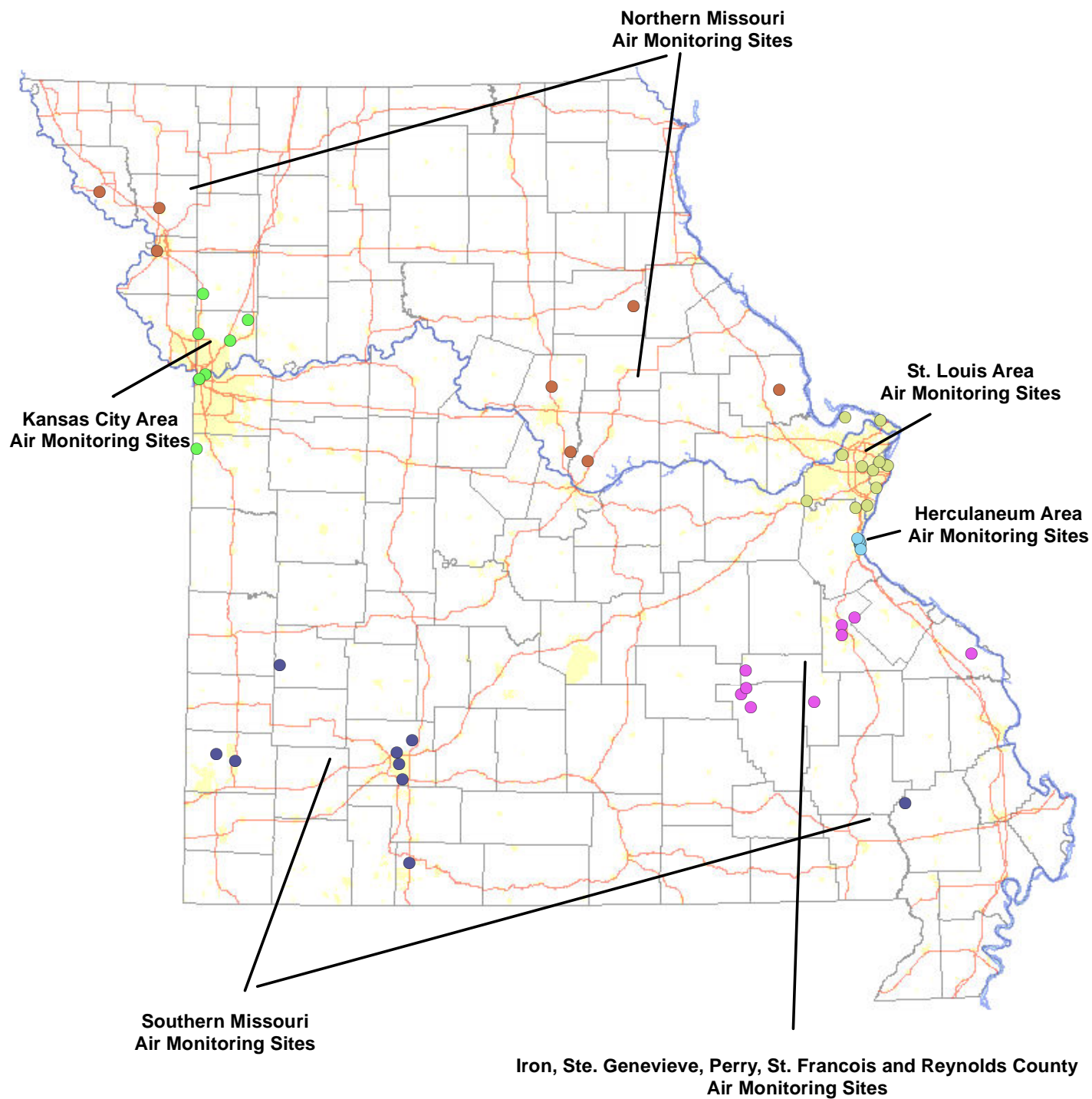
Northwest Missouri Air Monitoring Sites

Site Names	County	Pollutants Monitored	Site Status at end of Fiscal 2012
St. Joseph Pump Station	Buchanan	Inhalable Particulate (PM2.5 and PM10)	Active
Savannah	Andrew	Ozone	Active Mar 1 - Oct 31
Forest City	Holt	Lead	Active

Mid-Missouri and Northeast Air Monitoring Sites

Site Names	County	Pollutants Monitored	Site Status at end of Fiscal 2012
Finger Lakes State Park	Boone	Ozone	Active Mar 1 - Oct 31
New Bloomfield	Callaway	Ozone	Active Mar 1 - Oct 31
Ashland	Boone	Mercury Deposition	Active
Mark Twain State Park, Stoutsville	Monroe	Ozone, Inhalable Particulate (PM10), Sulfur Dioxide	Active
Foley	Lincoln	Ozone	Active Mar 1 - Oct 31

Air Quality Monitoring Sites - Fiscal 2012



Air Quality Assurance Summary Report

The Air Quality Assurance Unit is responsible for planning, managing, and performing all quality assurance activities in Missouri's ambient air monitoring network. In addition, the unit oversees state required networks operated by private industries.

Accomplishments

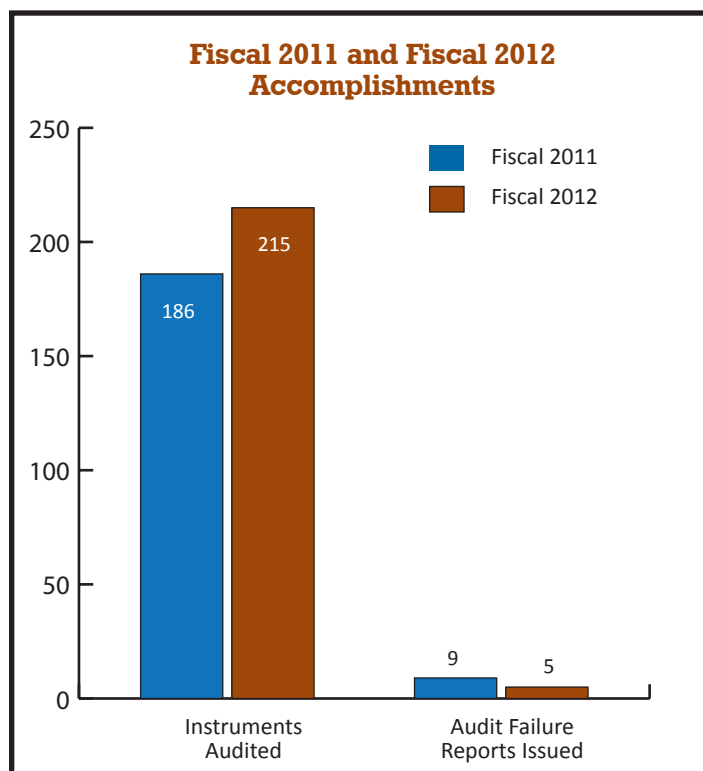
In fiscal 2012, Air Quality Assurance accomplished the following:

- Performance and system audits of instruments and organizations.
- Issued reports for each audit as well as audit failure reports when appropriate.
- Developed policies and procedures to meet the requirements of regulatory changes.
- Provided technical assistance to agencies and the program's Air Quality Monitoring Section when resources allowed.
- Managed a semi-permanent work share plan with EPA, Region 7 personnel to meet state quality assurance responsibilities.



Number of Instruments Audited

There was an increase in the number of audits conducted due to the development of new quality assurance projects which included participation in the National Environmental Protection Agency Performance Evaluations.



Audit Failure Reports Issued

The reduction in the number of audit failure reports issued could be the result of consolidation of the air network and reduction of certain audits conducted.

Technical Assistance

In fiscal 2012, assistance was provided to Springfield City Utilities to complete a state required monitoring project. Assistance was also provided to the program's Air Quality Monitoring Section. This assistance included coordination of improved sulfur dioxide monitoring methods and the development of techniques to perform automated quality control checks of instrumentation at remote sites.



Chemical Analysis Section Summary Report

The Chemical Analysis Section serves as the State of Missouri Environmental Laboratory. This section provides analytical testing and support vital in protecting Missouri's residents and natural resources. Chemists and staff in the section use their expertise and state of the art instruments to identify and confirm various contaminants both natural and man-made.

These contaminants include inorganic analytes, organic compounds, synthetic organic compounds, heavy metals, and biological contaminants, all of which may affect health, water quality and natural resources.

The section provides data necessary to evaluate and make decisions concerning air and water quality in Missouri. In addition, the section performs drinking water testing, which includes physical properties, metals, inorganic nonmetallic constituents, aggregate organic constituents and organic compounds.

Accomplishments

In fiscal 2012, the Chemical Analysis Section:

- Performed chemical analysis on more than 21,400 samples which included more than 58,800 individual tests and 266,250 individual parameters, or analytes. This analytical work included samples from Missouri Department of Natural Resources, Missouri Department of Conservation and Missouri Department of Health and Senior Services.
- Performed chemical analysis on more than 3,000 lead and copper samples for the Public Drinking Water Branch as part of EPA's Lead and Copper Rule. This project required coordinating sample collection, sample container shipping, and sample receipt performed over a three month period during the summer. The actual analyses took an additional three months to complete.
- Retained required EPA certification for drinking water chemical analyses as requested by the Public Drinking Water Branch. The certification included participation in an on-site audit of the department's drinking water laboratory by the EPA assessment team on Oct. 24-26, 2011. This audit included review of drinking water data, standard operating procedures, proficiency testing results, quality management plan, and interviewing chemists, support staff and management involved in drinking water analysis.
- Participated with EPA's Region 7 and Region 8 in a full-scale functional exercise held Oct. 14-21, 2011. This exercise allowed for an evaluation of the Water Laboratory Alliance Response Plan for Drinking Water, Environmental Response Laboratory Network, Laboratory Response Network and the Food Emergency Response Network.

This exercise also allowed us to test our own lab's response procedures. Our laboratory's participation involved initial coordination with the "primary laboratory" designee, setting up communication and exchanging information, and coordinating sample receipt, sample analysis and data result transfer. This week-long exercise was followed up with a "hot wash" and mock press release. Though it was only an exercise, it demonstrated our lab's ability along with other labs to coordinate a regional response to a drinking water incident.



- Finished work on the two-year project for the Water Pollution Control Branch using American Recovery and Reinvestment Act money. This project involved testing in several areas of the laboratory, including the wet chemistry unit. Work began in May 2010 and continued through September 2011. Through this project we were able to provide valuable analytical data as well as purchase additional laboratory instruments and equipment.

- Continued to provide technical assistance to department programs, as well as other state agencies and laboratories when needed. Such assistance, which includes clarification, an understanding of methods used at the laboratory, or guidance concerning an acceptable EPA analytical method, is mostly provided by phone or email.

- Began using a new air filter testing method for the department's Air Pollution Control Program. The new testing method for lead particles in the air by inductively coupled plasma-mass spectrometry required coordination and discussion with an EPA development laboratory and the Air Pollution Control Program. Testing using this new method began with the July 2011 air filters.

- Purchased three new gas chromatography instruments used to do a variety of organic methods. A new inductively coupled plasma-mass spectrometer used to analyze nearly 20 different metals was also purchased.

- Provided water sample results to clients and the public through the department's website at www.dnr.mo.gov/asp/esp/lims/select.asp.

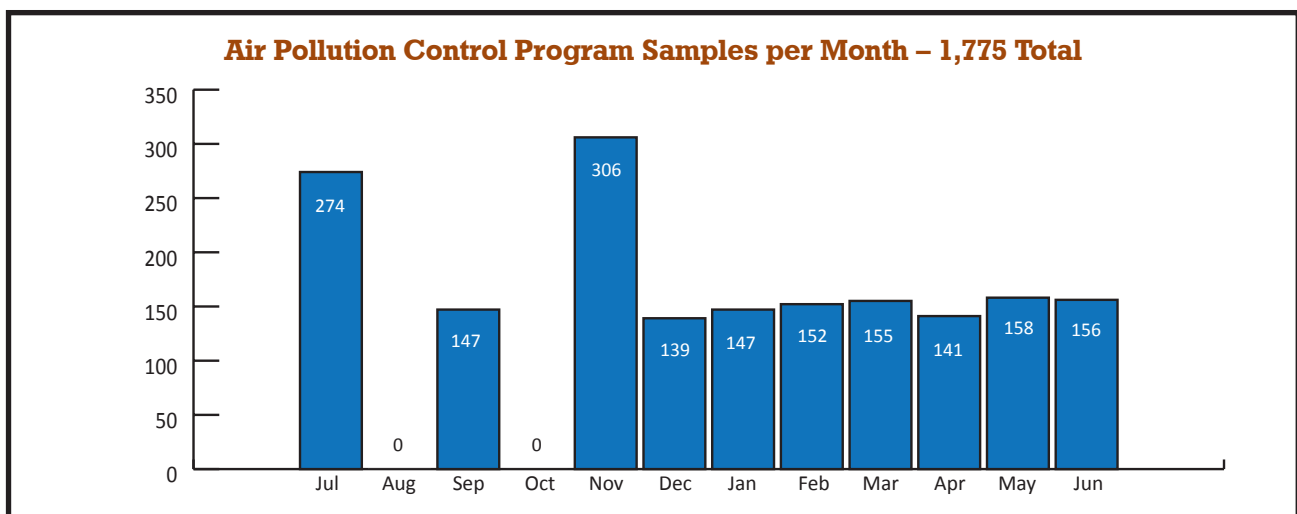
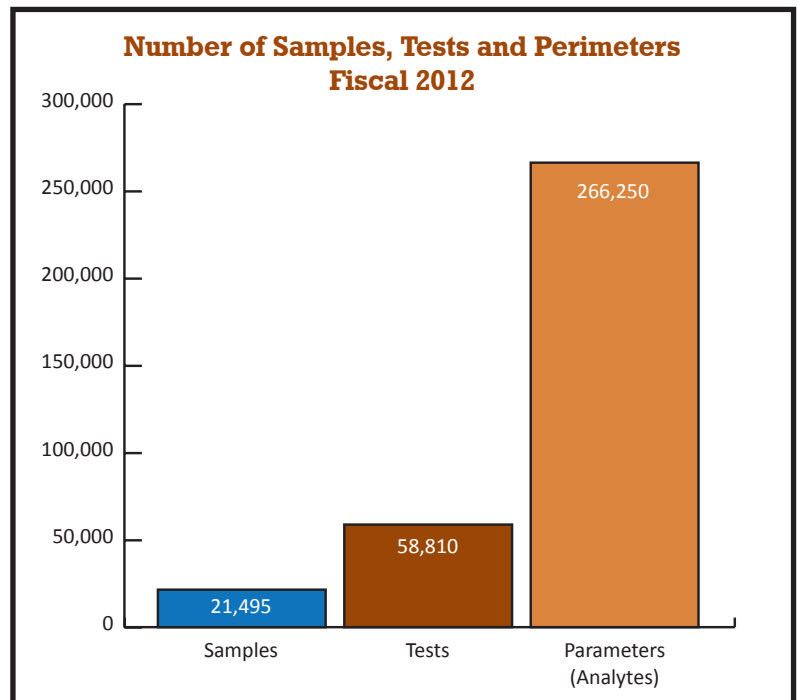
- Continued to provide a laboratory certification program for drinking water and acted as the state's primacy laboratory for chemical analysis. The laboratory certification program requires our laboratory certification officers to make on-site audits of Missouri laboratories on a tri-annual basis, review and track proficiency testing sample results for all labs certified for drinking water in Missouri, process application requests and provide reciprocal certification for non-Missouri laboratories. Performed reciprocal certification for eight labs. No on-site audits were performed during fiscal 2012.



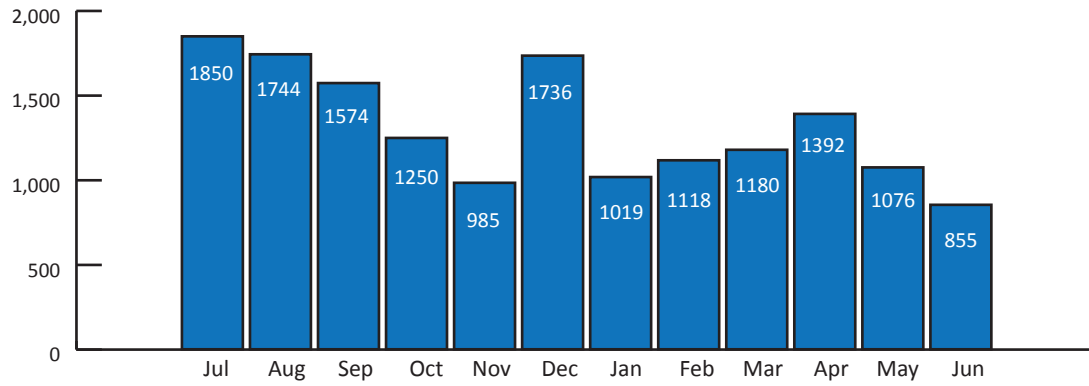
Missouri Laboratories	Reciprocal Laboratories (non-Missouri)
Chain of Rocks (St. Louis)	ALS Environmental Division – fiscal 2012
City Utilities of Springfield	American Water - Central Laboratory – fiscal 2012
Howard Bend (St. Louis)	Environmental Science Corporation – fiscal 2012
Kansas City Water Services	Fargo Cass Public Health Environmental Laboratory
TestAmerica (St. Louis)	National Testing Laboratories, Ltd. – fiscal 2012
	Pace Analytical Services Inc. – fiscal 2012
	Pace Analytical Services Inc. - Florida – fiscal 2012
	PDC Laboratories Inc. – fiscal 2012
	Underwriters Laboratories, Inc. – fiscal 2012

- Expedited sample analysis of drinking water, surface water, soil and materials in order to provide data for priority health and environmental assessments from various sites including:
 - Shapiro Brothers – Metals and organic analytes.
 - Flying J Travel Center – Benzene.
 - VA Hospital Poplar Bluff – TCE.
 - DeTray Plating – Metals, cyanide and hexavalent chromium.
 - Lee Chemical – Ongoing testing for the Hazardous Waste Program.

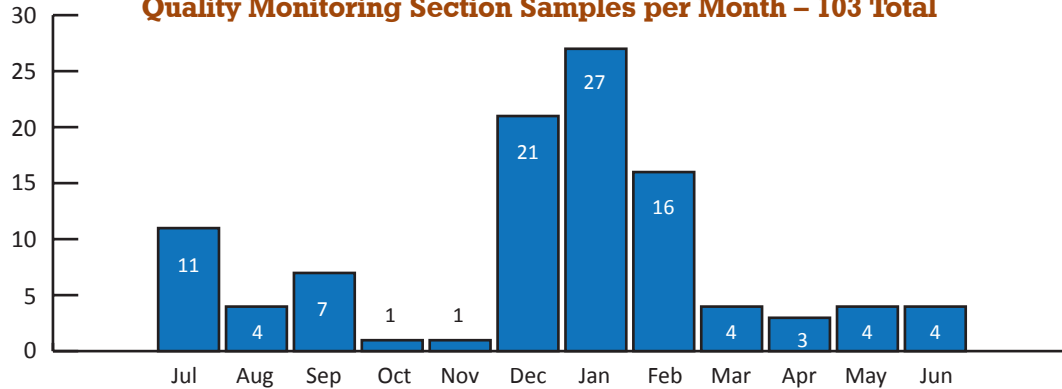
- Continued to use the early notification system for test results exceeding EPA defined maximum contaminate levels and action levels for all applicable drinking water analytes. This notification system is similar to the notification developed for reporting E. coli results exceeding established levels. These notifications are provided via e-mail to groups with direct responsibility for these results of interest. For example, benzene's maximum contaminant level is 5 ug/L for drinking water. Therefore, if the Chemical Analysis System management validates (passes managerial approval) a sample with a result that meets or exceeds 5 ug/L, an e-mail notification will be sent within 15 minutes to the Public Drinking Water Branch.
- Continued to use the *Sample Condition Upon Receipt Anomaly Report* to document issues with samples upon receipt at the laboratory. A copy of each report is sent to the appropriate project manager or regional office director and the Division of Environmental Quality administration in an effort to clarify issues to better serve our customers.
- Began the application process to become certified to perform analytical work on the EPA's Unregulated Contaminate Monitoring Rule 3 for the Public Drinking Water Branch. EPA conducted their third round of contaminant testing in drinking water systems in an effort to determine if any of these contaminants should be placed on a regular monitoring schedule or should be considered for regular testing as "regulated contaminants" in drinking water. Once the application process is complete and we are certified to do the testing, the testing will begin in calendar year 2013.
- Samples are representative aliquots of drinking water, wastewater, surface water, groundwater, soil, sludge, paint, air, pure product organic, etc., which are sent to the laboratory for analysis. Each sample has certain tests assigned that are requested by the sample provider and may include up to 30 separate tests. An example of a test for a drinking water sample is a volatile organic compound which includes more than 60 parameters. Parameters are individual analytes or constituents assigned to each test. For example, benzene is a parameter assigned to the volatile organic compound test.
- The following graphs detail the number of samples analyzed per month for each of the respective programs.



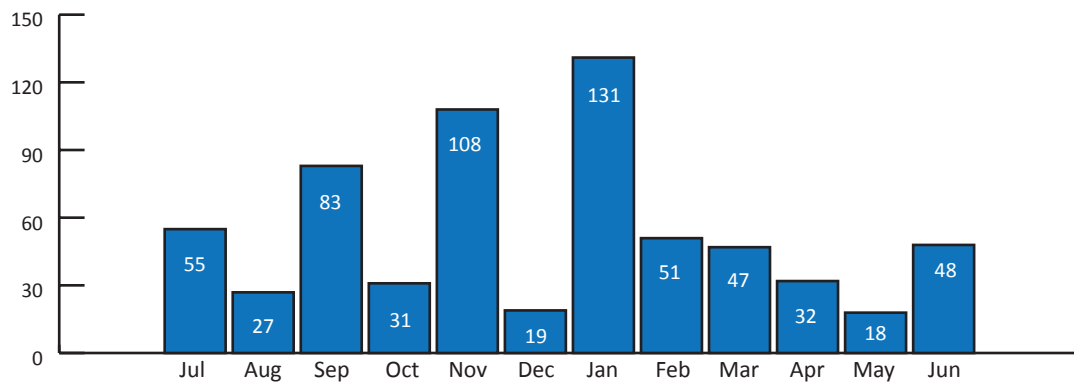
Public Drinking Water Branch Samples per Month – 15,799 Total



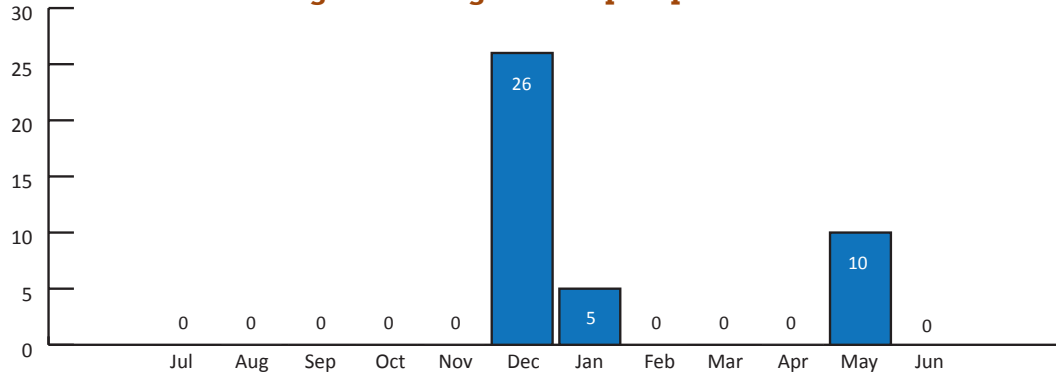
Environmental Services Program/Environmental Emergency Response/Water Quality Monitoring Section Samples per Month – 103 Total



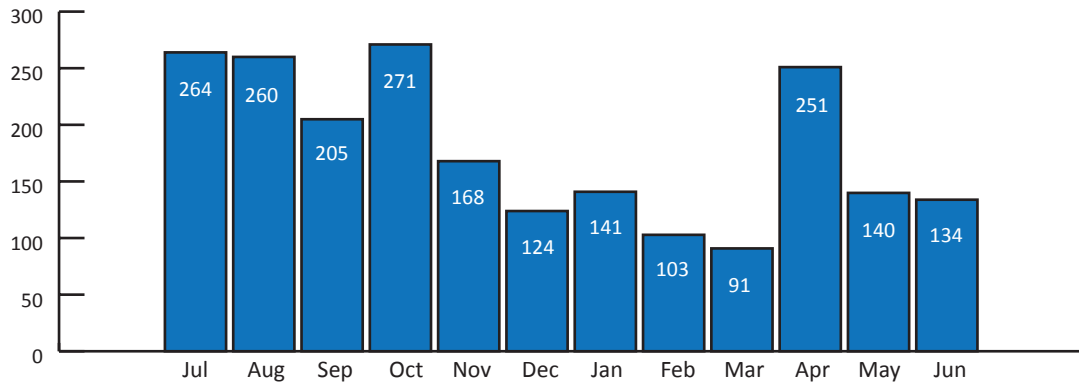
Hazardous Waste Program Samples per Month – 650 Total



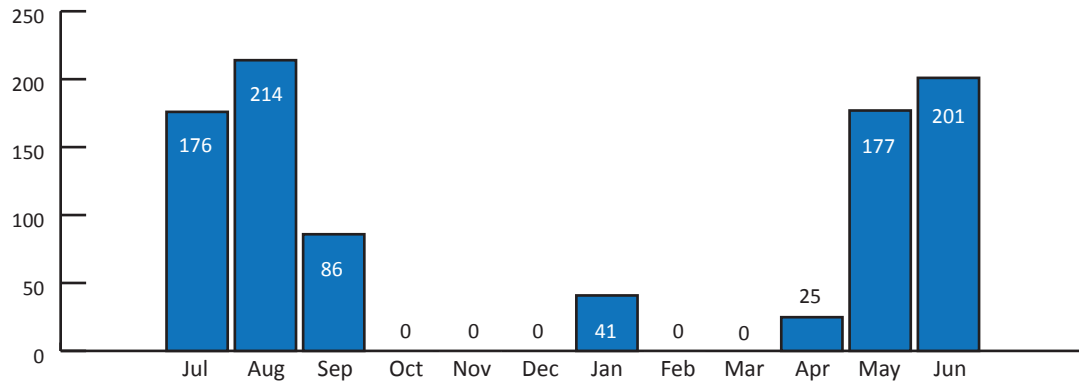
Solid Waste Management Program Samples per Month – 41 Total



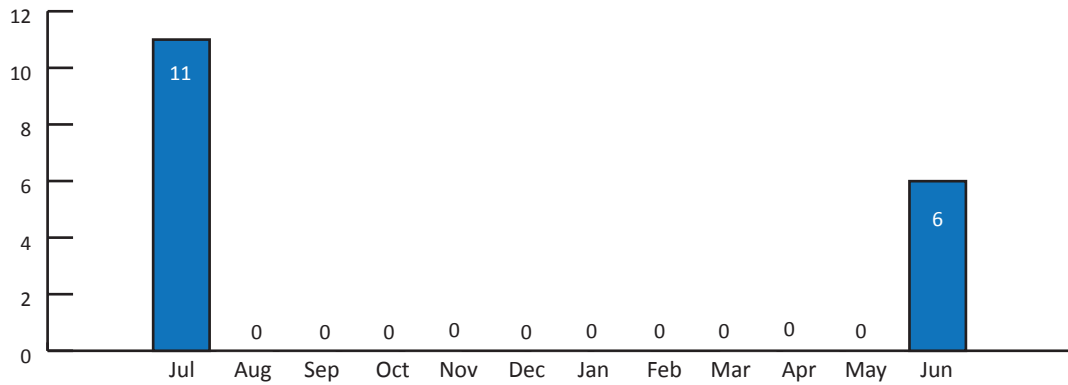
Water Pollution Control Branch Samples per Month – 2,152 Total



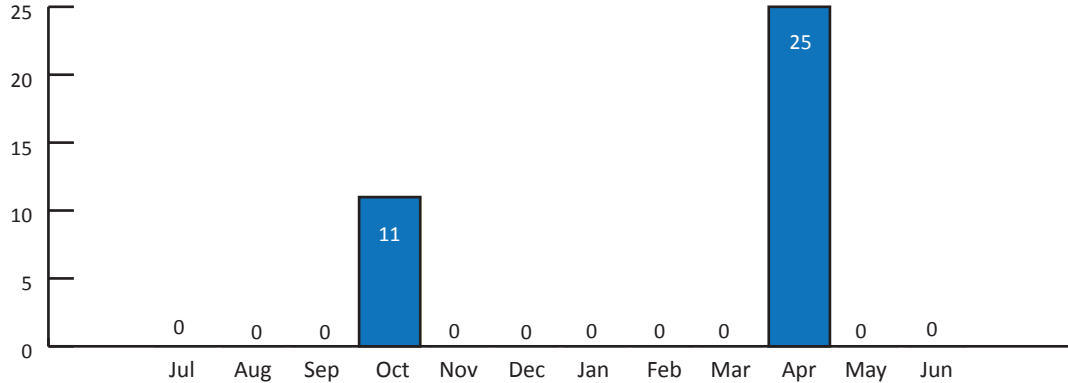
Division of State Parks Samples per Month – 920 Total



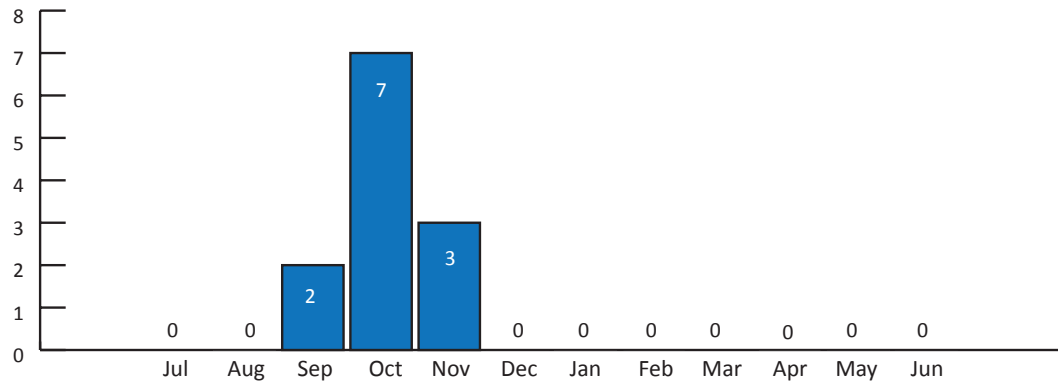
Division of Geology and Land Survey Samples per Month – 17 Total



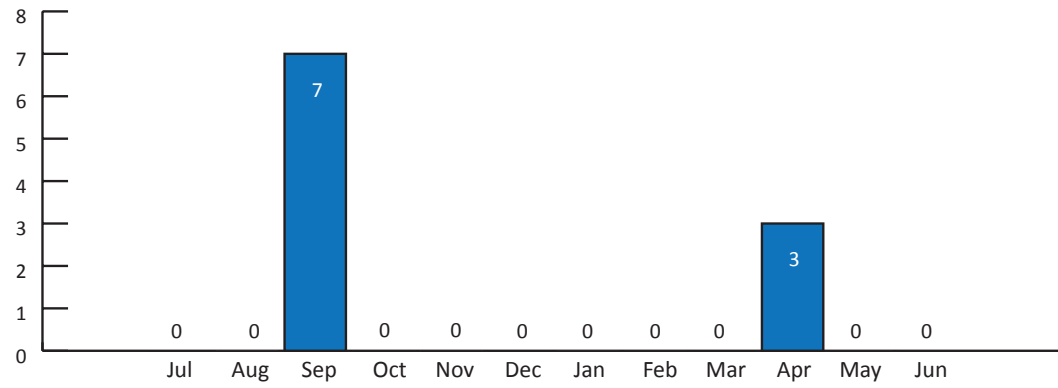
Laboratory Proficiency Testing Samples per Month – 36 Total



Department of Health Samples per Month – 12 Total



Missouri Department of Conservation Samples per Month – 10 Total





Environmental Emergency Response Section Summary Report

The Environmental Emergency Response Section is the department's front line of defense to significant and imminent hazardous substance releases that impact public safety and the environment. This section is primarily responsible for fulfilling the department's duties contained within Revised Missouri Statutes, Chapter 260, sections 260.500 through 550, commonly referred to as the "Spill Bill." Responsibilities include responding to address any chemical, petroleum, or other material spilled onto the land, water, or atmosphere that may impact the public health and safety and/or the environment.

Twelve duty officers monitor the statutorily-mandated spill reporting hotline 24 hours a day, seven days a week, 365 days a year, on a rotating basis. During normal business hours, duty officers staff the incident command center located at the Environmental Services Program in Jefferson City. After normal business hours, the spill reporting hotline is answered from the duty officer's residence.

Ten staff (in addition to the 12 duty officers) are stationed at six different locations throughout Missouri. State on-scene coordinators conduct operations out of these offices and are dispatched via the 24-hour spill reporting hotline by a duty officer in Jefferson City.

Additional information about emergency response may be viewed at <http://www.dnr.mo.gov/env/esp/esp-eer.htm>.

Environmental Emergency Response Tracking System

The Environmental Emergency Response Section uses a database, the Missouri Environmental Emergency Response Tracking System, commonly referred to as MEERTS, as a repository for information related to all hazardous substance emergencies/releases. Details of each spill/incident are entered into MEERTS by the officer on duty at the time of the spill. Information in MEERTS can be queried as far back as December 1993 and is available on the internet in a searchable format at <http://dnr.mo.gov/asp/esp/meerts/select.asp>.



Accomplishments

During fiscal 2012, the section accomplished the following:

- 3,211 incidents (including methamphetamine incidents) were reported through the 24-hour spill reporting hotline.
- Responded to 264 incidents, not including methamphetamine lab incidents.
- Purchased homeland security equipment to more effectively respond to mercury releases and improved disaster communications.

Kansas City Region's Selected Hazardous Material Incidents



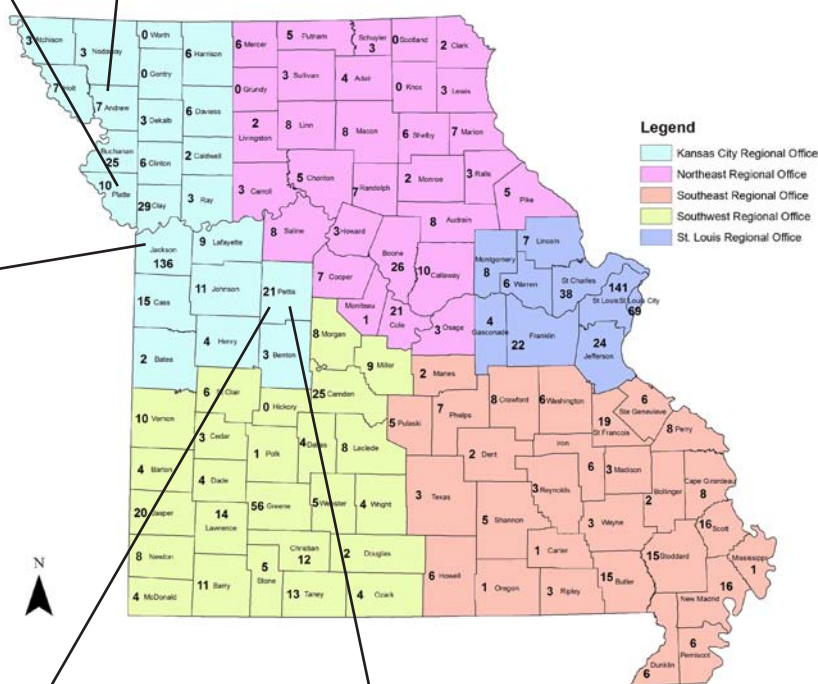
Platte County – Contaminated soil is excavated from a road ditch after an above ground storage tank was overfilled at a convenience store and the fuel exited through an open drain in the secondary containment.



Andrew County – Efforts are made to contain diesel fuel spilled into a waterway after saddle tanks are ruptured during a tractor trailer accident.



Jackson County – Flags mark the location of radioactive medical waste found at a landfill after radiation meters alarmed.



Pettis County – A vacuum truck removes petroleum liquids, a byproduct of natural gas, from a road ditch after an operator overfilled a tank at a pipeline compressor station.



Pettis County – Diesel fuel is recovered from an interceptor trench after an underground line leading to a dispenser began leaking at an agricultural coop.

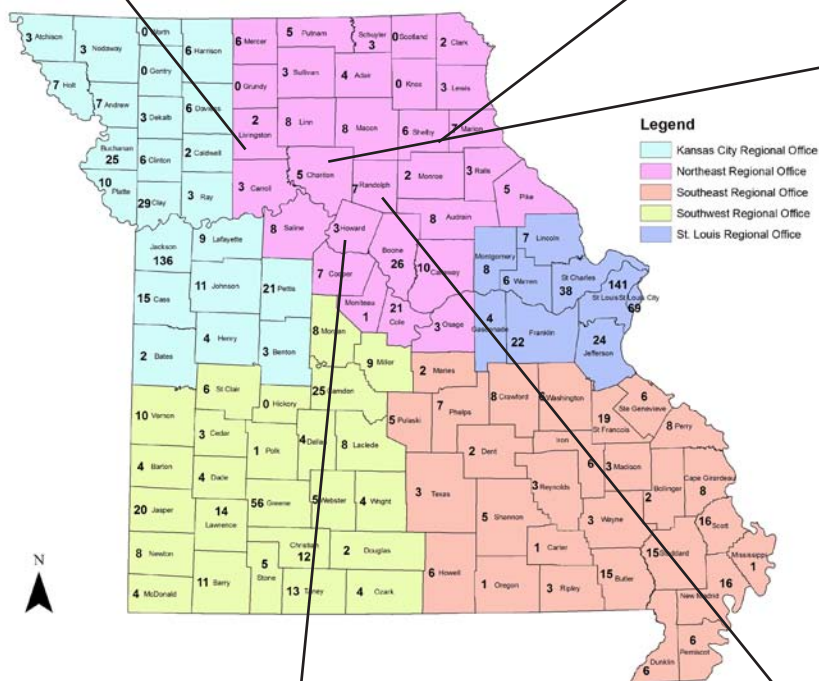
Northeast Region's Selected Hazardous Material Incidents



Livingston County – A tractor tanker crashes resulting in a fatality and release of nearly 6,000 gallons of asphalt emulsion into Medicine Creek.



Shelby County – A tractor trailer catches fire on Hwy 36 releasing diesel fuel and motor oil to the road ditch.



Chariton County – An unknown reddish brown liquid appears in a holding cell at a fertilizer plant causing an irritating smell and concern in the community.



Howard County – A suspicious fire at a suspected meth lab sickens many first responders and results in a number of agencies and resources being brought in to investigate the incident.



Randolph County – More than 30 barrels of crude oil are released at a pipeline pump station near Cairo.

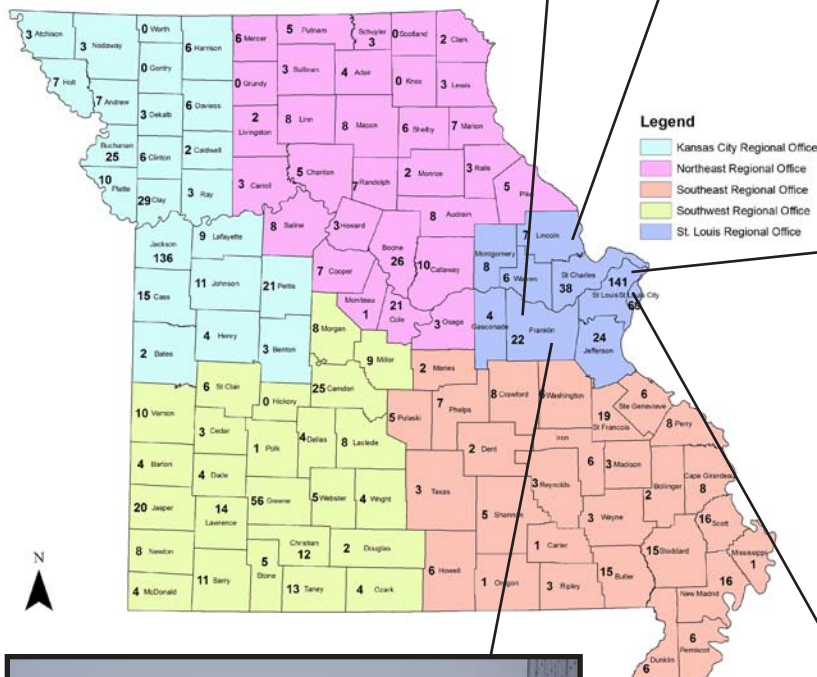
St. Louis Region's Selected Hazardous Material Incidents



Franklin County – Numerous tanks and containers containing unknown chemicals are discovered and required careful investigation before proper disposal could be completed.



Lincoln County – Fish and other aquatic life are killed after a tank containing farm herbicides is vandalized releasing several hundred gallons of chemicals into the waterways.



St. Louis County – Incompatible pool chemicals were mixed together in a bucket resulting in an explosion, sending two individuals to the hospital and contaminating the kitchen at the residence.



Franklin County – A hazardous materials technician carefully deals with a semi-tanker that was releasing sulfuric acid vapors causing I-44 to be closed for an extended period of time.

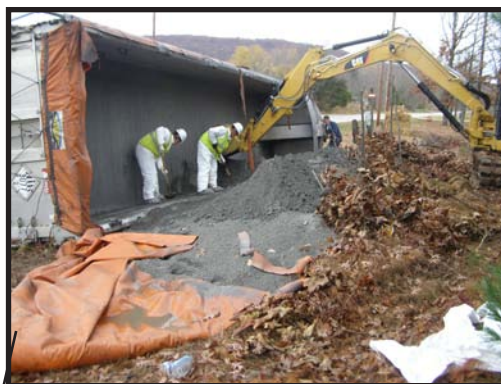


St. Louis City – Discarded methamphetamine lab chemicals were discovered in a dumpster causing alarm from nearby residents.

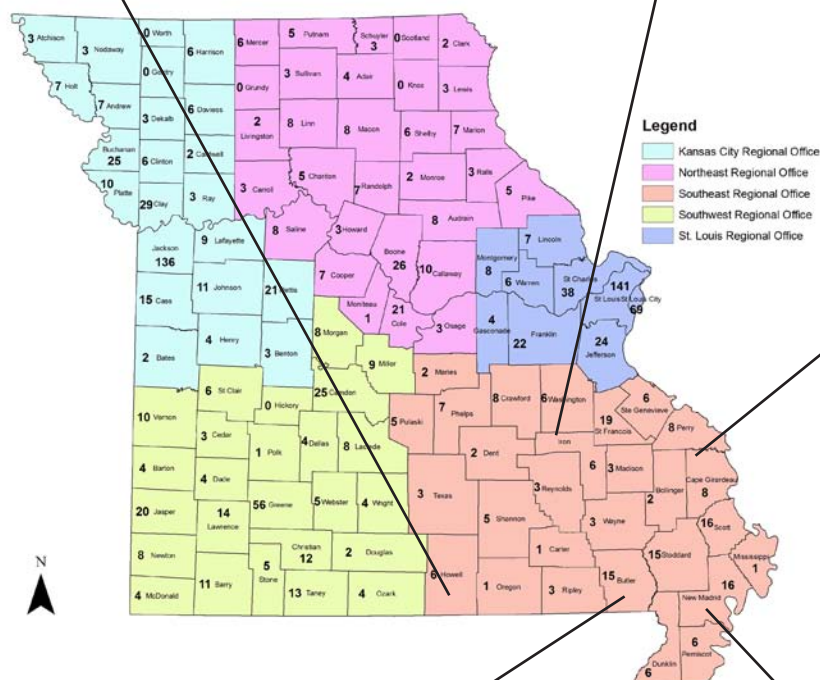
Southeast Region's Selected Hazardous Material Incidents



Howell County – A high school requests assistance from Environmental Emergency Response with identification and management options of hundreds of old and unknown bottles and vials from a chemistry laboratory.



Iron County – Cleanup crews remove the remaining zinc sulfate from an overturned tractor trailer.



Cape Girardeau County – A tank exploded at a power plant injuring a worker and releasing several thousand gallons of hydrochloric acid.



Butler County – Hundreds of abandoned drums are discovered at a defunct business in Poplar Bluff.



New Madrid County – A crane removes a crop duster after it crashed in a drainage ditch releasing aviation fuel and liquid fertilizer.

Southwest Region's Selected Hazardous Material Incidents



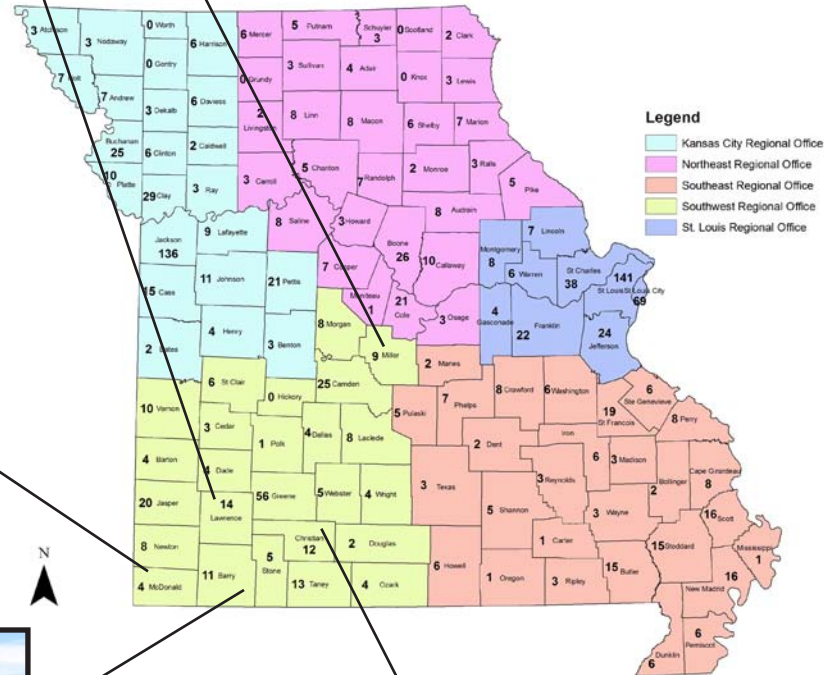
Lawrence County – An emergency responder uses a vacuum to clean up mercury after a spill in a high school classroom.



Miller County – More than 100 gallons of diesel fuel and hydraulic oil are released on to a country road after a farm implement catches fire.



McDonald County – A vacuum truck and empty tanker are rushed to the scene of a tractor trailer accident that released asphalt oil to a losing stream.

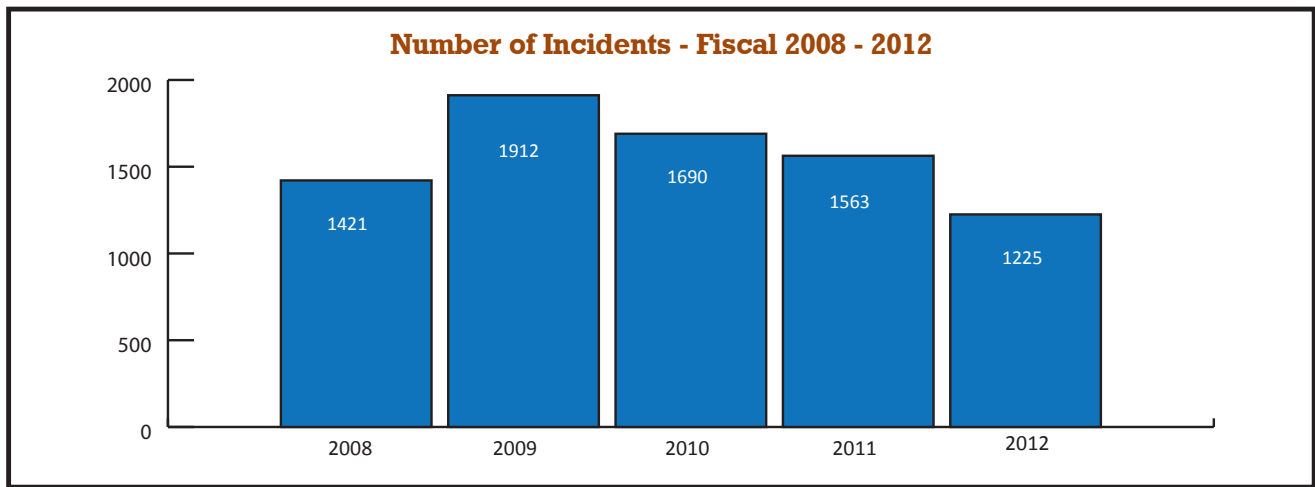


Barry County – Environmental Emergency Responders assist local authorities with a diesel fuel cleanup after vandals stole a city owned fuel truck and crashed it resulting in a 500-gallon spill.

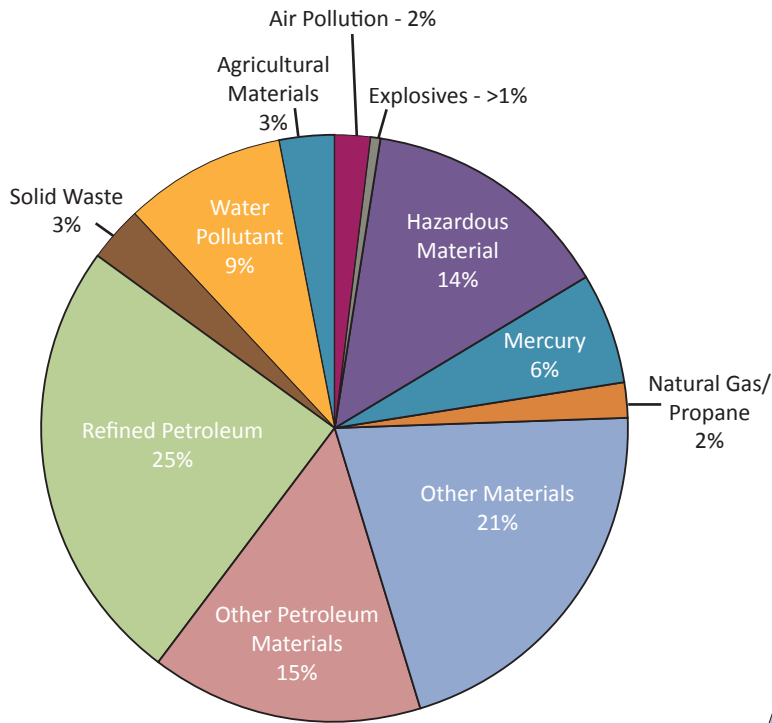


Christian County – Contaminated soil is dug up after a tanker truck developed a leak while parked on a gravel lot overnight releasing 2,500 gallons of denatured ethanol.

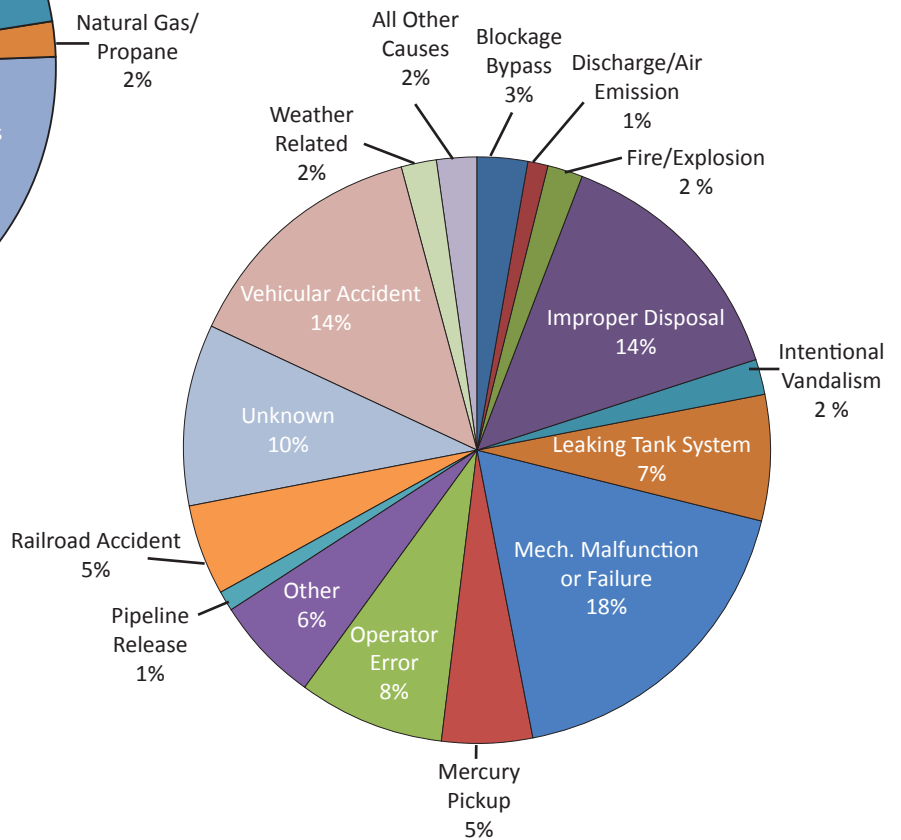
The following graph and charts illustrate a comparative number of incidents received over the last five fiscal years, the type by percentage of materials involved in fiscal 2012, and the type by percentage of materials involved received in fiscal 2012.



Fiscal 2012 Incident Material Categories



Fiscal 2012 Incident Causes



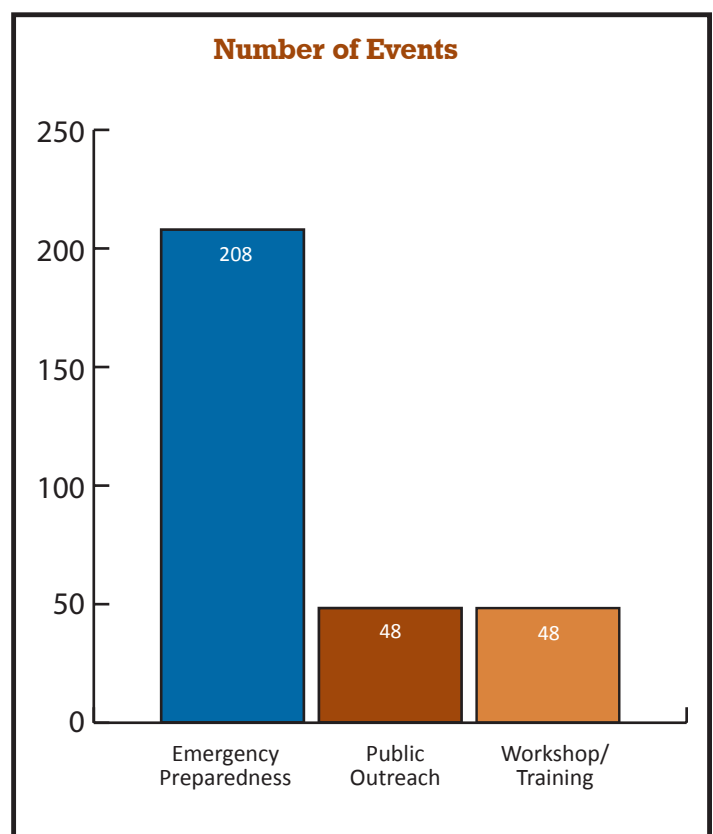
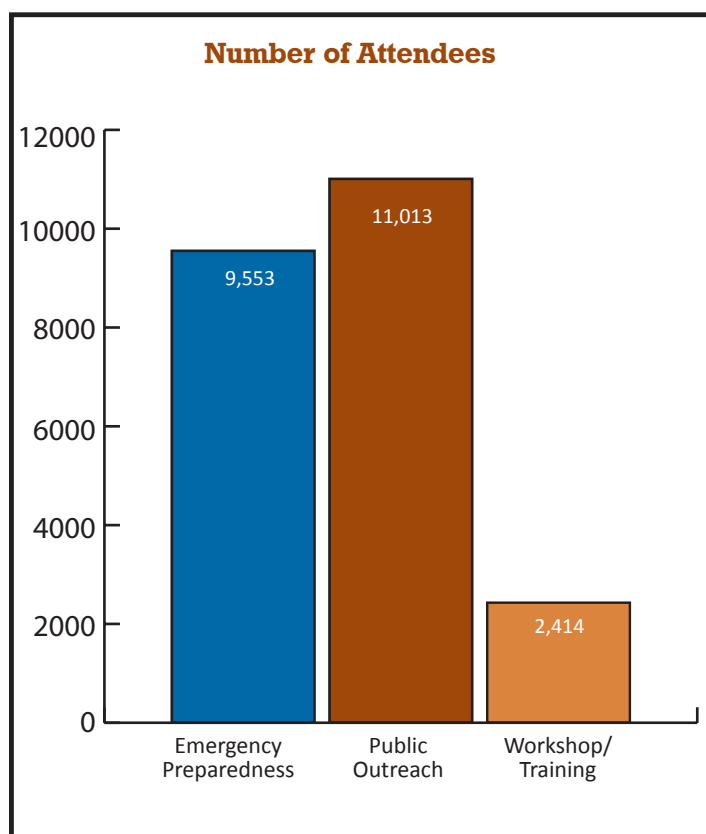
Public Outreach

The Environmental Emergency Response Section works diligently to develop and advance working relationships with local, state, and federal partners. Understanding the roles and responsibilities of these various agencies and sharing our mission before environmental emergencies occur in their jurisdictions is extremely important.

It is equally important to educate, inform, and interact with the general public, school children, and other parties to further their understanding of what their role is in protecting the environment and the mission of emergency response.

In fiscal 2012, the section reached an estimated 22,980 individuals at 304 different events, including an environmental emergency response booth at the Missouri State Fair, local emergency planning committee meetings, regional homeland security oversight committee meetings, career fairs, Earth Day events, and other local, regional, and statewide exercises and training events.

The following graphs show the number of individuals reached and the number of events in the categories of emergency preparedness, public outreach and workshops/trainings.



Field Services Unit Summary Report

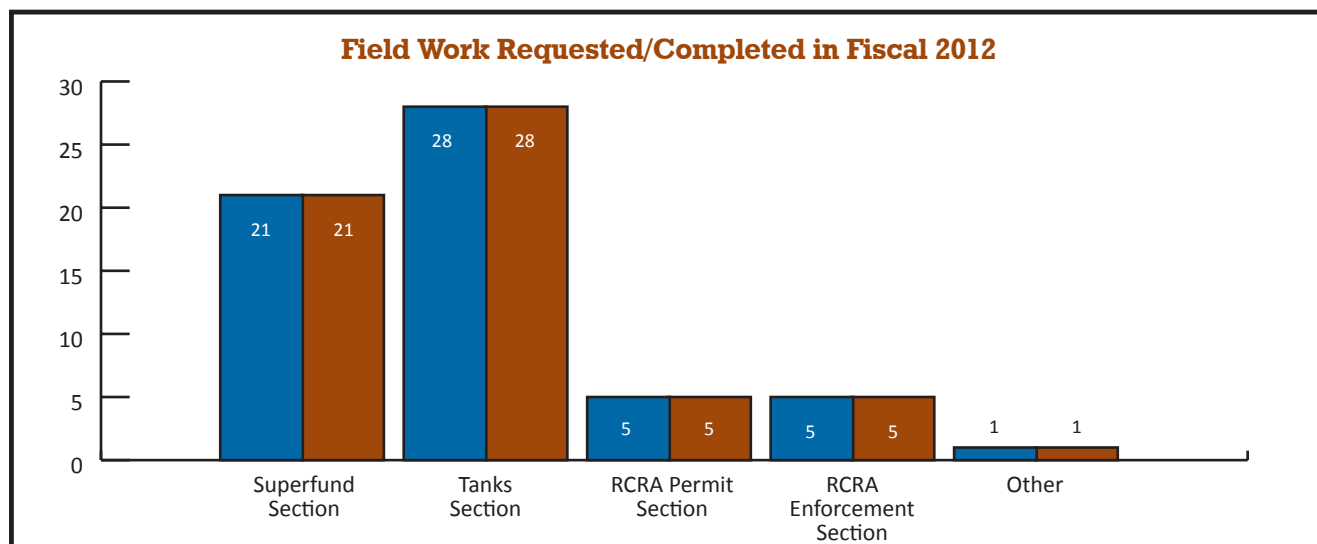
Staff in the Field Services Unit provides field support primarily to the department's Hazardous Waste Program. Unit personnel have the training, experience and equipment to conduct field investigations that involve collection and analysis of various environmental media and potential hazardous wastes at superfund sites, Resource Conservation and Recovery Act-regulated facilities, leaking underground storage tank sites and emergency response incidents.

Accomplishments

In fiscal 2012, staff conducted the following field investigations at various locations throughout the state:

- Twenty-one sampling investigations at superfund-led sites.
- Twenty-eight sampling investigations at leaking underground storage tank sites when petroleum products were the contaminants of concern.
- Five Resource Conservation and Recovery Act operation and maintenance field audits where staff critiqued the field sampling and analysis procedures followed by the regulated community. Collected split samples to verify the levels of contaminants found in groundwater.
- Five sampling investigations at Resource Conservation and Recovery Act-regulated facilities to assist in characterizing hazardous wastes that are generated on-site at various types of industries.
- In addition to providing support to the hazardous waste program, staff also assisted other programs and divisions within the department when specialized sampling techniques and equipment were needed to help solve environmental problems.
- The Field Services Unit staff is housed within the Environmental Emergency Response section and provides field sampling support as needed on emergency response incidents that occur throughout the state. Consequently, staff not only are sampling experts, but also cross-trained as environmental emergency response duty officers and state on-scene coordinators for the department.

The Field Services Unit is often requested to aid other sections in conducting field investigations. The following graph illustrates the number of work-related requests by sections and work completed by the unit.





Methamphetamine Initiatives Summary Report

The Clandestine Drug Lab Collection Station Program was created in 1998 in partnership with local fire service and law enforcement agencies to give narcotics officers a place to safely, efficiently and legally store seized clandestine drug lab (primarily methamphetamine) solid and hazardous waste, precursors and other manufacturing materials pending proper management and disposal.

The department and the Missouri State Highway Patrol have partnered since 2000 to deliver a 40-hour Hazardous Waste and Emergency Response for Methamphetamine Laboratories (Clandestine Lab) training course. Through lecture and practical exercises, participants receive necessary training to enable them to be certified by their employer to enter and dismantle clandestine methamphetamine laboratories. Since 2000, 38 training courses have been delivered reaching 1,032 participants.

The section developed and administers the collection station program, provides supplies and equipment to law enforcement agencies and collection state operators, partners with the Missouri State Highway Patrol to deliver meth lab related health and safety and hazardous materials training state-wide, and disposes of collected meth lab materials.

Accomplishments

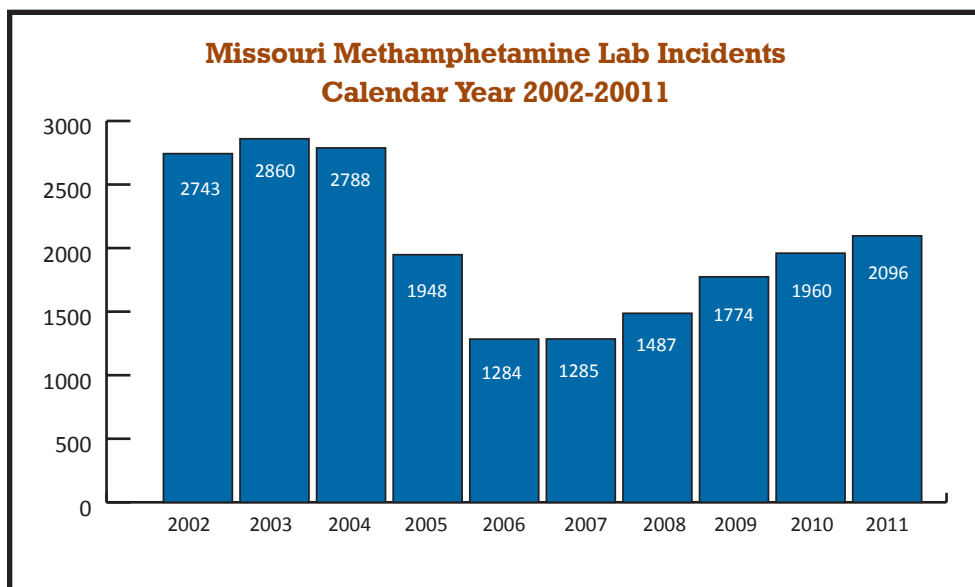
In fiscal 2012, there were 18 authorized collection stations statewide, 2015 reported meth related incidents, including 1,309 meth labs processed at these collection stations. The following maps, graphs and charts illustrate the locations of the clandestine drug lab collection stations, methamphetamine lab incidents per county, the number of meth lab incidents from calendar year 2002 through 2011, and the disposal categories of the 19,724 pounds of materials processed from the 1,309 methamphetamine incidents.

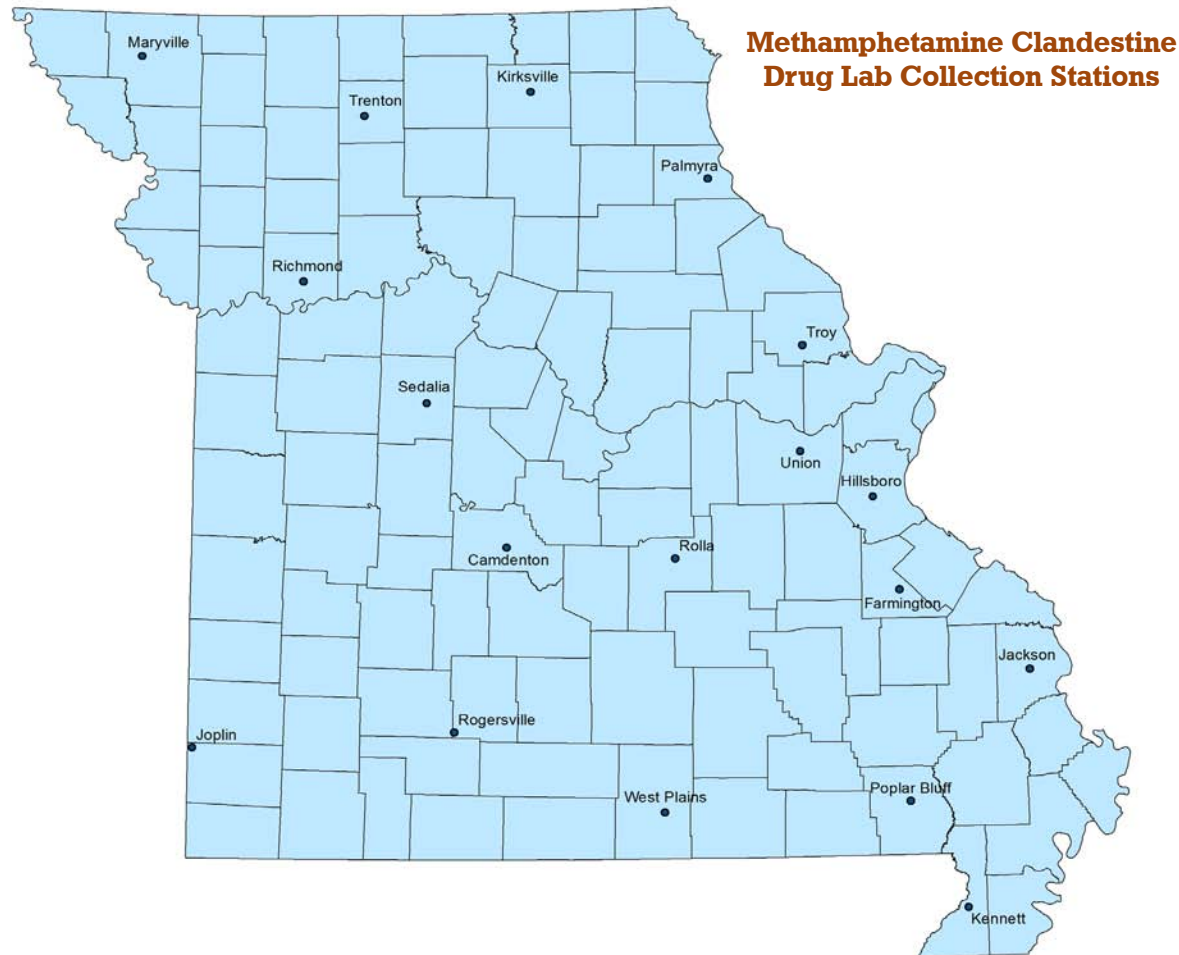
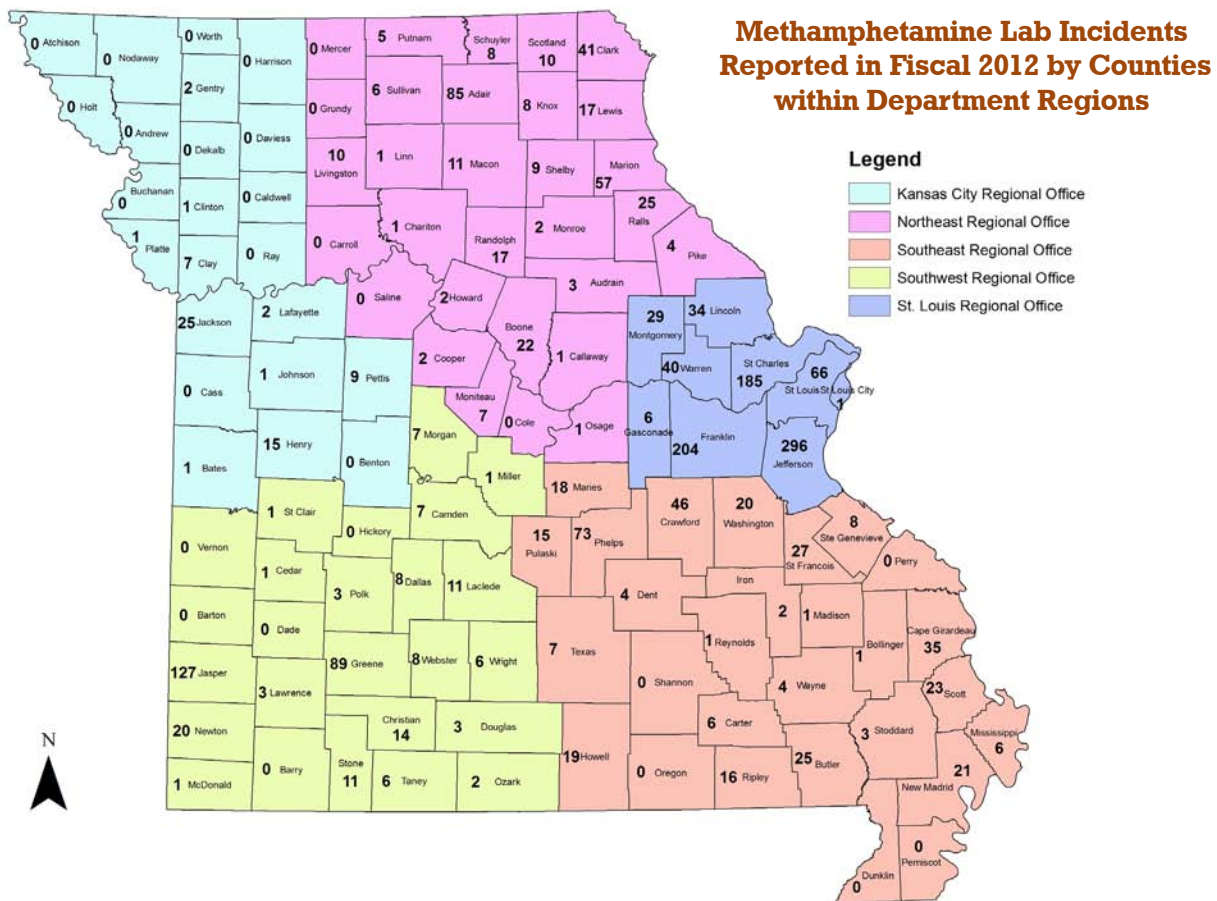
Methamphetamine Supplies and Equipment Distribution

Items are provided at no cost to law enforcement agencies so they may safely enter and dismantle or otherwise respond to meth lab incidents. Items are also provided to collection station operators to properly manage clandestine drug lab chemicals and debris. Supply items provided include chemical protective coveralls, air purifying respirators and cartridges, gloves and boot covers, overpacks and containers, pH paper, safety glasses and goggles, transportation labels, sample media, absorbent material, etc.

Methamphetamine Training in Fiscal 2012

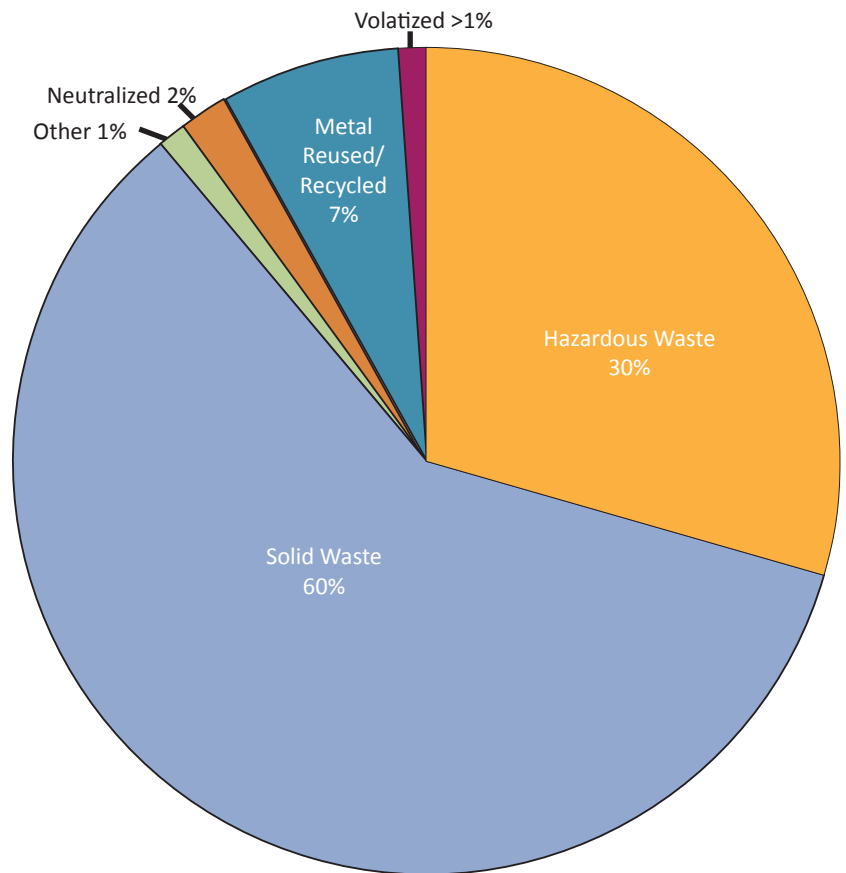
- Two 40-hour Hazardous Waste and Emergency Response for Methamphetamine Laboratories classes with approximately 26 participants per class.
- Four 8-hour Hazardous Waste and Emergency Response for Methamphetamine Laboratories re-certification classes with approximately 18 participants per class





**Collected Methamphetamine Lab
Materials Disposed in Fiscal 2012**

Methamphetamine Lab Material Disposal Categories	Pounds of Material
Neutralized	363
Metal Reused/Recycled	1,361
Volatilized	84
Hazardous Waste	5,904
Solid Waste	11,777
Other	234
Total Materials Processed	19,723



Water Quality Monitoring Section Summary Report

The Environmental Services Program's Water Quality Monitoring Section, comprising the aquatic biological assessment and water quality monitoring units is responsible for assessing the biological health of Missouri's rivers and streams, as well as monitoring water and sediment quality throughout the state. The Water Quality Monitoring Section works in support of the Water Protection Program and the Solid Waste Management Program.



Aquatic Biological Assessment Unit

Biological assessments are evaluations of the condition of waterbodies using surveys and other direct measurements of resident biological organisms (macroinvertebrates, fish and plants). Biological assessment results are used to answer the question of whether waterbodies support survival and reproduction of desirable fish, shellfish and other aquatic species.

- Conducted biological assessments and collected 109 samples from the following 40 streams:

Waterway	County	Waterway	County
Apple Creek	Cape Girardeau	Big Creek	Shannon
Blair Creek	Shannon	Boeuf Creek	Franklin
Bonne Femme Creek	Boone	Burris Fork	Moniteau
Castor River	Madison	Cedar Creek	Cedar
East Fork Black River	Reynolds	Grindstone Creek	DeKalb
Hinkson Creek	Boone	Honey Creek	Nodaway
Ingalls Creek	Hickory	Jacks Fork River	Texas
Little Black River	Ripley	Little Fox River	Clark
Little Lindley Creek	Dallas	Little Maries River	Maries
Little Whitewater River	Bollinger	Logan Creek	Reynolds
Long Branch Platte River	Nodaway	Loutre River	Montgomery
Main Ditch	Dunklin	Marble Creek	Madison
Marrowbone Creek	Daviess	Mine a Breton Creek	Washington
No Creek	Livingston	North Fork River	Douglas
North River	Marion	Old Mines Creek	Washington
Pomme De Terre River	Polk	River Aux Vases	Ste. Genevieve
Saline Creek	Ste. Genevieve	Sinking Creek	Reynolds
Sinking Creek	Shannon	Spring Creek	Adair
Sweetwater Creek	Reynolds	Taum Sauk Creek	Reynolds
Tavern Creek	Miller	White Cloud Creek	Nodaway

- A total of 107,483 macroinvertebrate taxa determinations were made in fiscal 2012, bringing the total count in the database to approximately 1.84 million since 1994. Staff members identified two insect taxa that were previously undocumented by the department.
- Supported the Water Protection Program with biological and habitat assessments of five 303(d) listed streams. Section 303(d) of the Clean Water Act and Environmental Protection Agency regulation 40 CFR Section 130.7(d) (1) published in July 1992, requires each state to submit a Total Maximum Daily Load Priority List to the Environmental Protection Agency.
- Supported the Water Protection Program with nutrient criteria and the assessments of nutrient data from reference streams and statewide nutrient data for development of nutrient criteria for rivers and streams. Participated in technical workgroups to develop nutrient criteria for rivers and streams.
- Supported the Water Protection Program with assessment of biological surveys collected by contractors to assess Tyson's temperature effect on Little Muddy Creek in Pettis County. This completes the second of a three year study.
- Continued to conduct intensive biological assessments to determine the long term impact and recovery of the East Fork Black River from the December 2005 catastrophic failure of the upper Taum Sauk Reservoir.



Potential Poor Water Quality Indicator - Midge larvae (Chironomidae) are generally more tolerant of organic pollutants than many other aquatic macroinvertebrates.



Good Water Quality Indicator - Mayflies in the taxonomic family Baetiscidae are sensitive to organic pollutants and their presence is indicative of good water quality.



- Supported the Water Protection Program with biological assessments of streams impacted by historical mining.
- Supported the Water Protection Program with biological assessment oversight and cataloging of stream attributes within the project area of Holcim's Ste. Genevieve quarry and cement kiln. The facility is entering a 100 year operating permit. Post-operation mitigation efforts will be designed to restore an aquatic community similar to what is currently present.
- Actively participated in the Collaborative Adaptive Management process for Hinkson Creek in Columbia, Missouri. The goal of this process is to assess both water quality and the aquatic community of the stream through a two to three year study. To that end, the first round of sampling was conducted in spring 2012.

Water Quality Monitoring Unit

- Completed quality assurance audits at 18 solid waste landfills that included both groundwater and landfill gas monitoring from approximately 80 monitoring locations.

Landfill	County	Landfill	County
Ameren Sioux Powerplant Utility Waste Landfill	St. Charles	Springfield Sanitary Landfill	Greene
Backridge Sanitary Landfill	Lewis	Courtney Ridge Sanitary Landfill	Jackson
City of Columbia Sanitary Landfill	Boone	Eagle Ridge Sanitary Landfill	Pike
Marshall Sanitary Landfill	Saline	Farmers Stone Product Landfill	Livingston
Veolia Oak Ridge Sanitary Landfill	St. Louis	Fulton Sanitary Landfill	Callaway
Prairie Valley Disposal Sanitary Landfill	Crawford	Lamar Sanitary Landfill	Barton
Rumble II Recycling and Disposal Landfill	Jackson	Maryville Sanitary Landfill	Nodaway
Pink Hill Acres Demolition Landfill	Jackson	Prairie View Regional Waste Facility	Barton
Show-Me Regional Landfill	Johnson	Southeast Sanitary Landfill	Jackson

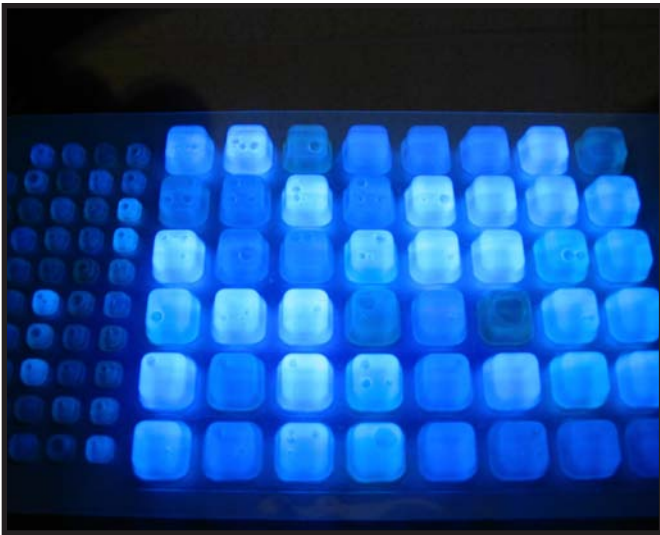
- Collected 42 fish tissue samples from 21 sites on both lakes and streams to determine contaminant levels in the fish tissue. The data collected was shared with the Environmental Protection Agency, Department of Health and Senior Services, and Department of Conservation for determination of human health advisories and for monitoring trends in contaminant levels. Fish tissue samples were collected from the following waterways:

Waterway	County	Waterway	County
Bee Tree Lake	St. Louis	Black River	Butler
Bourbeuse River	Franklin	Busch Conservation Area – Kraut Run Lake	St. Charles
Busch Conservation Area – Lake #36	St. Charles	Busch Conservation Area – Lake #37	St. Charles
Center Creek	Jasper	Deer Ridge Community Lake	Lewis
Eleven Point River	Oregon	Flat Creek at Carpenter Rd.	Pettis
Foxboro Lake	Franklin	Frisco Lake	Phelps
Holden City Lake	Johnson	Hough Park Lake	Cole
Lake Springfield	Greene	Lake St. Louis	St. Charles
Little Dixie Lake	Callaway	Meramec River	Franklin
Spring River	Jasper	Sugar Creek Lake	Randolph
Sunset Lake	Cole		

- Performed compliance sampling at 81 wastewater treatment facilities across the state to ensure compliance with permit requirements. Approximately 190 effluent samples were collected.
- Conducted three wasteload allocation surveys on streams receiving effluent from the communities of Knob Noster (lagoon), Versailles Wastewater Treatment Facility and Tipton Wastewater Treatment Facility. A total of 110 water samples were collected in conjunction with this effort.



- Provided weekly E.coli analysis of water samples collected from 20 swimming areas located in the department's state parks during the recreation season. More than 785 analyses were completed by staff. Swimming areas and sampling results are available at <http://dnr.mo.gov/asp/spbeaches/state-park-beach-status.asp>.



State Park Swimming Area	State Park Swimming Area
Crowder	Mark Twain – Public Beach
Cuivre River	Pomme de Terre – Hermitage
Finger Lakes	Pomme de Terre – Pittsburg
Harry S Truman – Public Beach	St. Joe – Monsanto
Harry S Truman - Campground	St. Joe – Pim
Lake Ozarks #1	Stockton
Lake Ozarks #2	Thousand Hills
Lake Wappapello	Trail of Tears
Lewis and Clark	Wakonda
Long Branch	Watkins Mill

- Performed ambient stream sediment monitoring from six sites around the state to determine if the level of metals present were sufficient to cause toxicity.

Waterway	County	Waterway	County
Mill Creek	St. Francois	Pond Creek	Washington
Shibboleth Creek (two sites)	Washington	Mineral Fork	Washington
Little Courtois Creek (two sites)	Washington	India Creek	Washington

- Monitored 13 streams on a quarterly basis to assess nutrient levels across the state. Approximately 60 samples were collected in this effort. The data is used by the Water Protection Program in developing nutrient criteria for inclusion into the water quality standards. Streams monitored for nutrients included:

Waterway	County	Waterway	County
Maple Slough	Mississippi	Old Channel Little River	New Madrid
Sugar Creek	Harrison	Cypress Ditch	Stoddard
Long Branch Creek	Nodaway	Grindstone Creek	Daviess
W. Fork Yellow Creek	Linn	Shoal Creek	Caldwell
Charrette	Warren	E. Fork Yellow Creek	Linn
Saline Creek	Ste. Genevieve	Plattin Creek	Jefferson
Little River Ditch	Stoddard		

- Monitored two streams at three locations, bi-weekly to assess nutrient levels. Approximately 125 samples were collected in this effort. The data are used by the Water Protection Program in developing nutrient criteria for inclusion into the water quality standards. Streams monitored include:

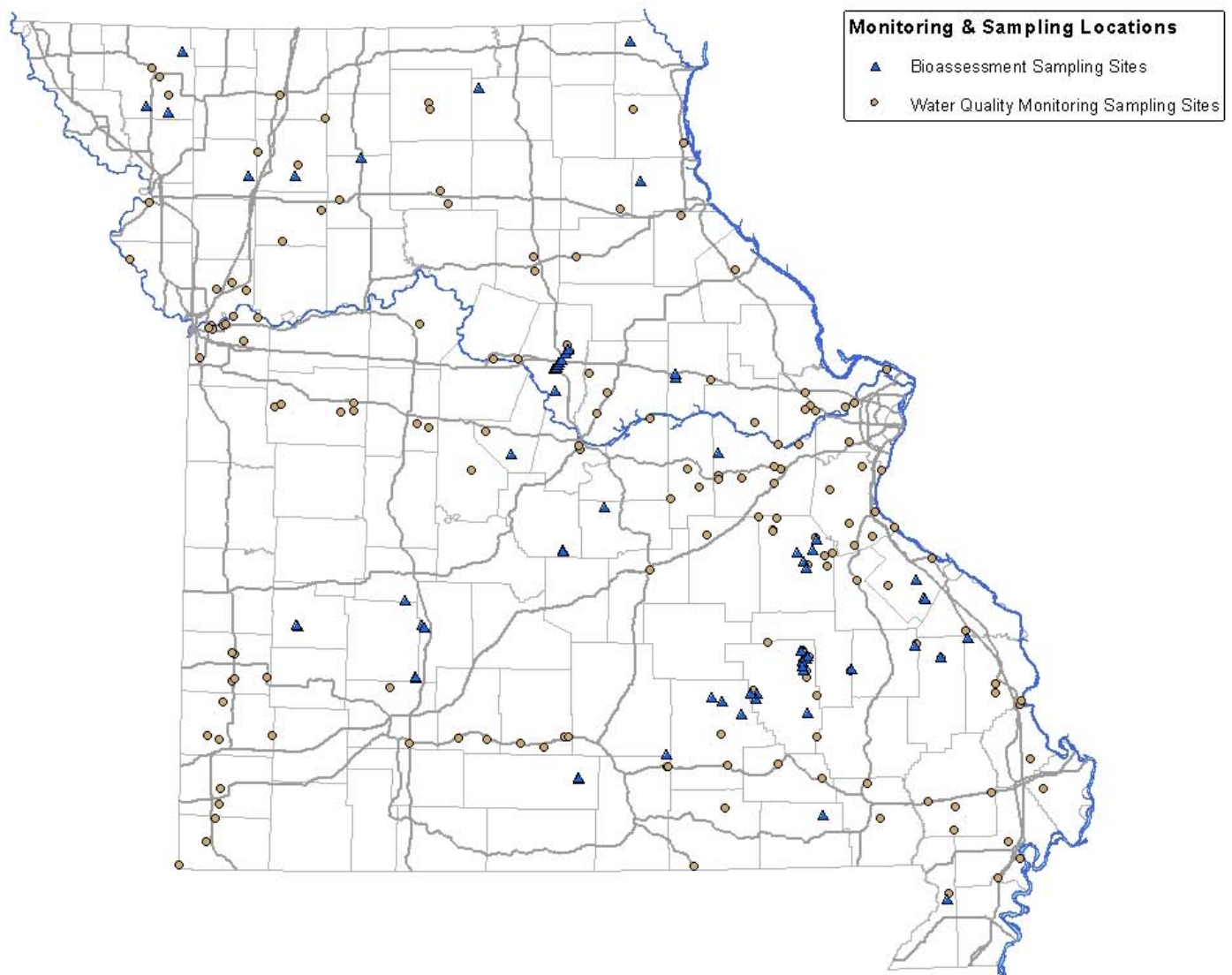
Waterway	County
Black Creek	Audrain
N. Fork Spring River	Barton
N. Fork Spring River	Jasper

- Performed five field audits of department staff that regularly collect environmental samples. Field audits validate sample collection methods, techniques, documentation and labeling.

- Conducted approximately 50 fecal coliform analyses in support of the inspection efforts of the regional offices.
- Conducted and coordinated quality assurance and quality control of field meters.
- Continued to conduct water quality assessments to determine the long term impact and recovery of the East Fork Black River from the catastrophic failure of the upper Taum Sauk Reservoir by collecting approximately 180 stream samples from 14 sites.
- Conducted updates of standard operating procedures to ensure procedures for all water quality sampling activities in the department are current.



Fiscal 2012 Water Quality Monitoring Sampling Sites



Occupational Safety and Health Consultant Summary Report

The Occupational Safety and Health Consultant is housed within the Environmental Services Program. The consultant oversees safety issues primarily within the Division of Environmental Quality, and provides recommendations to the remaining divisions on an as needed or as requested basis.



Accomplishments

During fiscal 2012, the Occupational Safety and Health Consultant accomplished the following:

Automated External Defibrillators-In a cooperative effort with the Division of State Parks risk manager, the consultant oversaw the management of the automated external defibrillator, or AED, program. The consultant reviewed the quarterly reports of all department assigned AEDs to ensure all were in working order. In fiscal 2012, all the AEDs required upgrades with new software. This required personal inspection of all 43 department AEDs.

HAZWOPER Training- The consultant was the coordinator for EPA, coordinator for hazardous waste operations and emergency response, or HAZWOPER. In fiscal 2012, Environmental Protection Agency funding was eliminated. The consultant worked with Environmental Emergency Response staff to add HAZWOPER training to the methamphetamine training contract. The consultant also oversaw the 8-hour refresher training which, in fiscal 2012, was accomplished by employees taking an on-line training course at no charge.

Medical Monitoring Program - There were 129 employees in the medical monitoring program in fiscal 2012, an increase of two employees. This included employees in three separate divisions: Division of Environmental Quality, Division of Geology and Land Survey, and Division of State Parks. The total cost for the medical monitoring program in fiscal 2012 was \$46,232.39 for an average cost per visit of \$358. This is a 65 percent decrease from fiscal 2011. The difference between fiscal 2011 and fiscal 2012 is a result of some tests being conducted on a biyearly basis; fiscal 2012 was a limited testing year.

Respiratory Fit Testing - The consultant oversees the department's respiratory protection program. There are currently 57 employees active in this program; this includes staff from the Division of Environmental Quality and the Division of State Parks. These employees are fit tested annually by the consultant. A Portacount machine is used to ensure each employee's state issued respirator fits properly. Staff members within the respiratory protection program are also seen by the medical monitoring contractor to ensure they are physically fit to wear the respirator they are issued. The consultant is also responsible for ensuring staff members are properly trained on each piece of respiratory equipment they possess and that the equipment is taken care of properly.



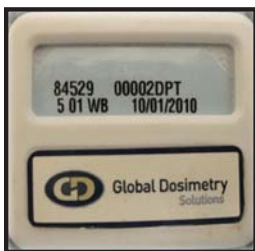
Department Training - As part of his duties, the consultant conducts various safety and hazardous materials response training throughout the year. This includes safety training during the following department events: new employee orientation for all department employees and safety orientation for Environmental Services Program employees. The consultant provided CPR/First Aid training for 30 employees in fiscal 2012. The consultant also conducts hazardous materials refresher trainings for staff members of the Environmental Emergency Response Section on an as requested basis.

Intranet Safety Site - The consultant maintains the intranet safety site for the department where safety information is posted for dissemination.

Inspections - The consultant inspected every regional and satellite office for safety hazards. During this inspection, he identified several areas which could have possibly caused employee injury or property damage.

Inspection and Enforcement Committee - In fiscal 2012, the consultant served on the Inspection and Enforcement committee. This committee is working on updating the department's Inspection and Enforcement training for new inspectors and enforcement personnel within the Division of Environmental Quality.

Risk Management Committee - The consultant served on the department's risk management committee as a safety consultant.



Thermoluminescent Dosimetry - Thermoluminescent Dosimetry badges were issued to 28 staff members. Each quarter the consultant receives a report indicating how much radiation each badge has received and records the information into a database. The consultant verifies that each staff member has not received any occupational radiation above the levels outlined in the department/state policy. In fiscal 2012 a process was started to reduce the costs associated with this program while increasing the data gained for employee protections. This project will be completed in fiscal 2013.



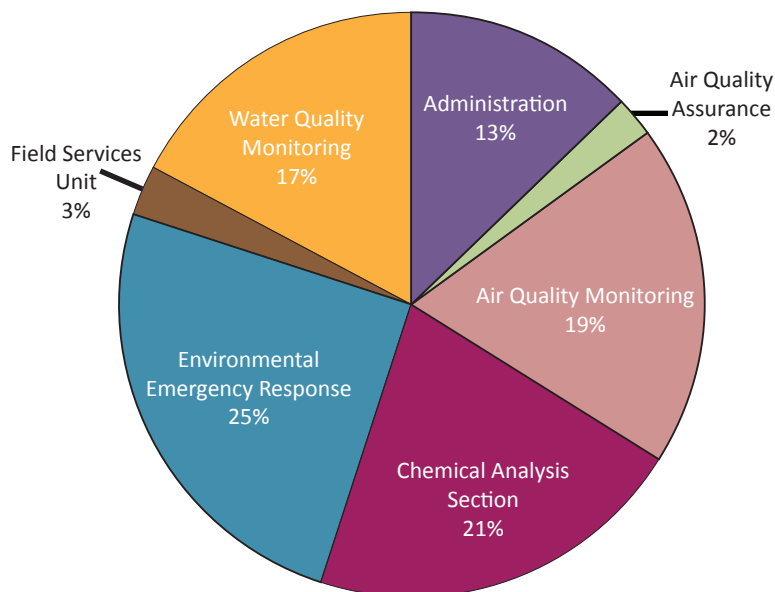
Administrative Unit Summary Report

The Administrative Unit is responsible for the Environmental Services Program fiscal and administrative functions.

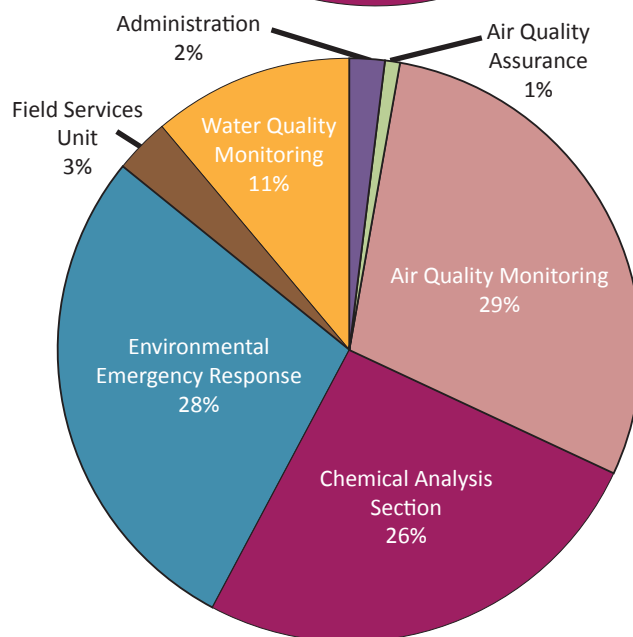
The program performs work for most Division of Environmental Quality programs, the Division of State Parks, and the Division of Geology and Land Survey. The program also has partnerships with other state departments including the Missouri Department of Conservation, Department of Health and Senior Services, and the University of Missouri. The diversity of work and funding requires the Administrative Unit to manage more than 70 funding sources each year. The operation of the laboratories and the high volume of field work requires extensive expense and equipment expenditures to support operations.

Summary of Expenses

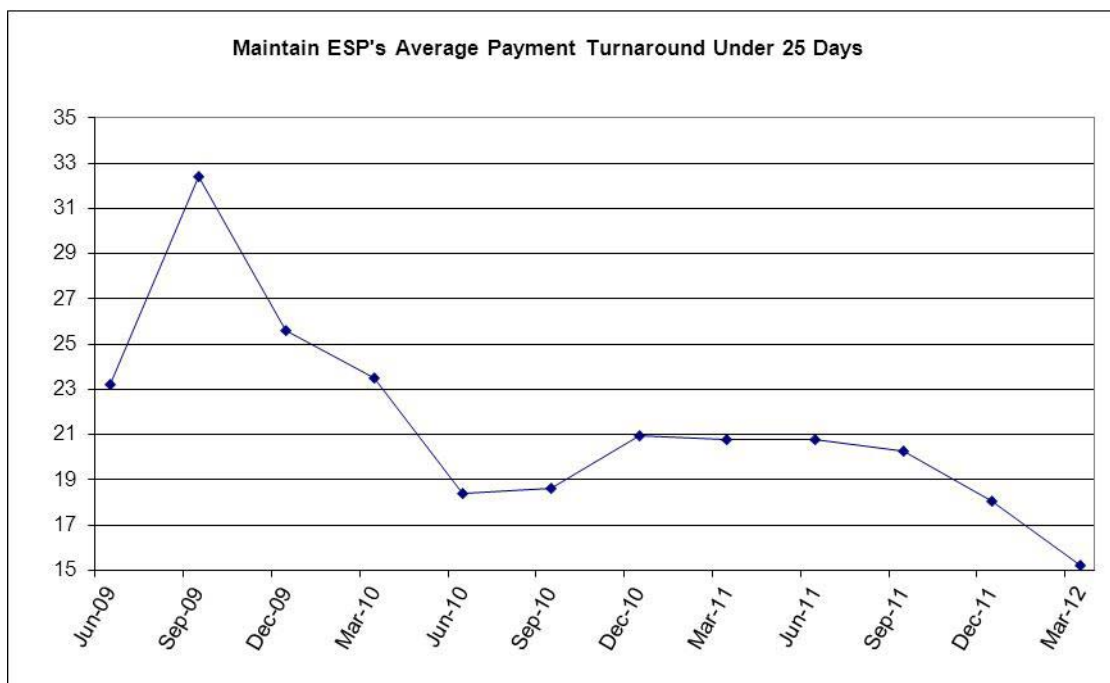
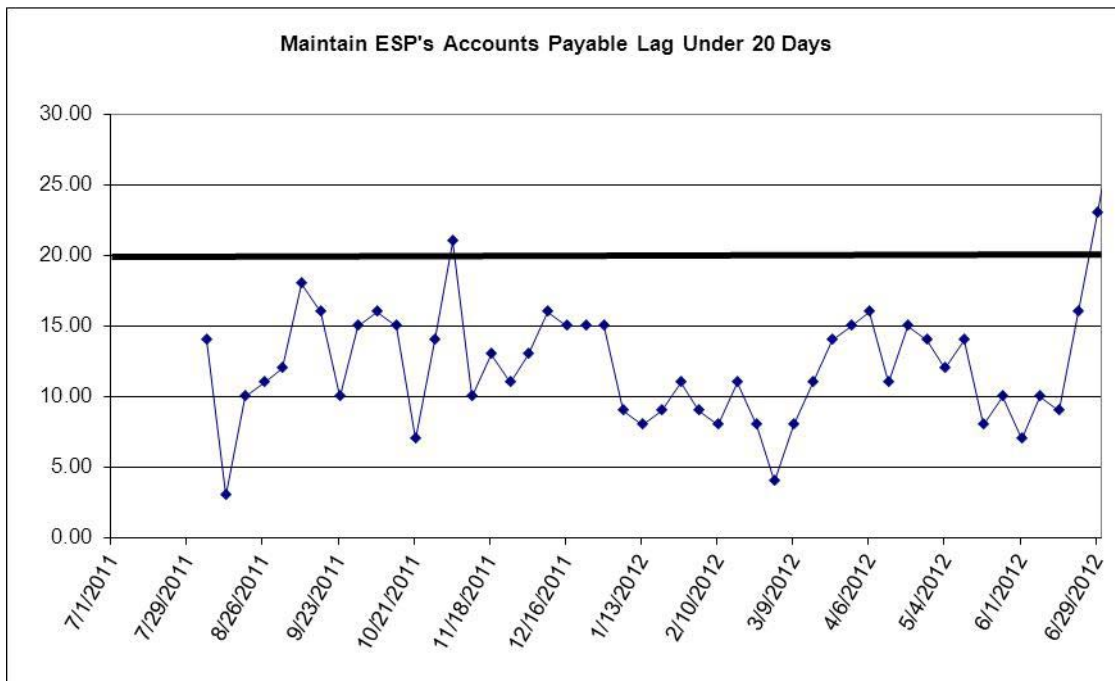
Fiscal 2012 Personal Services Expenditures	
Administration	\$448,784.91
Air Quality Assurance	\$ 62,035.87
Air Quality Monitoring	\$690,364.33
Chemical Analysis Section	\$738,268.15
Environmental Emergency Response	\$912,039.68
Field Services Unit	\$110,292.23
Water Quality Monitoring	\$615,829.37
Total	\$3,577,614.54

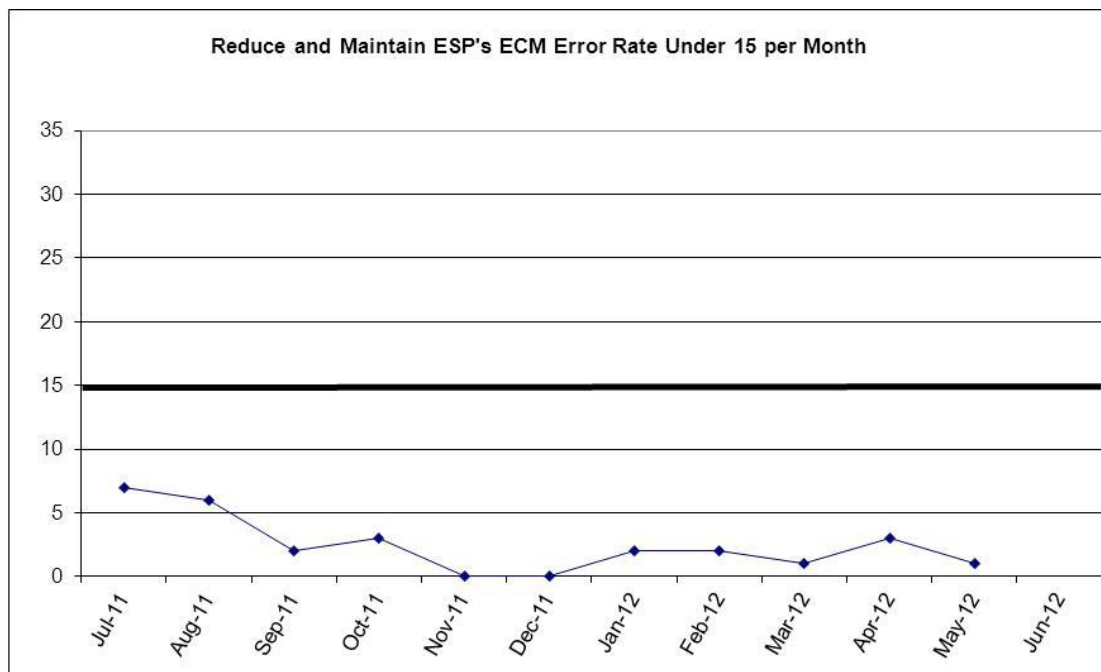
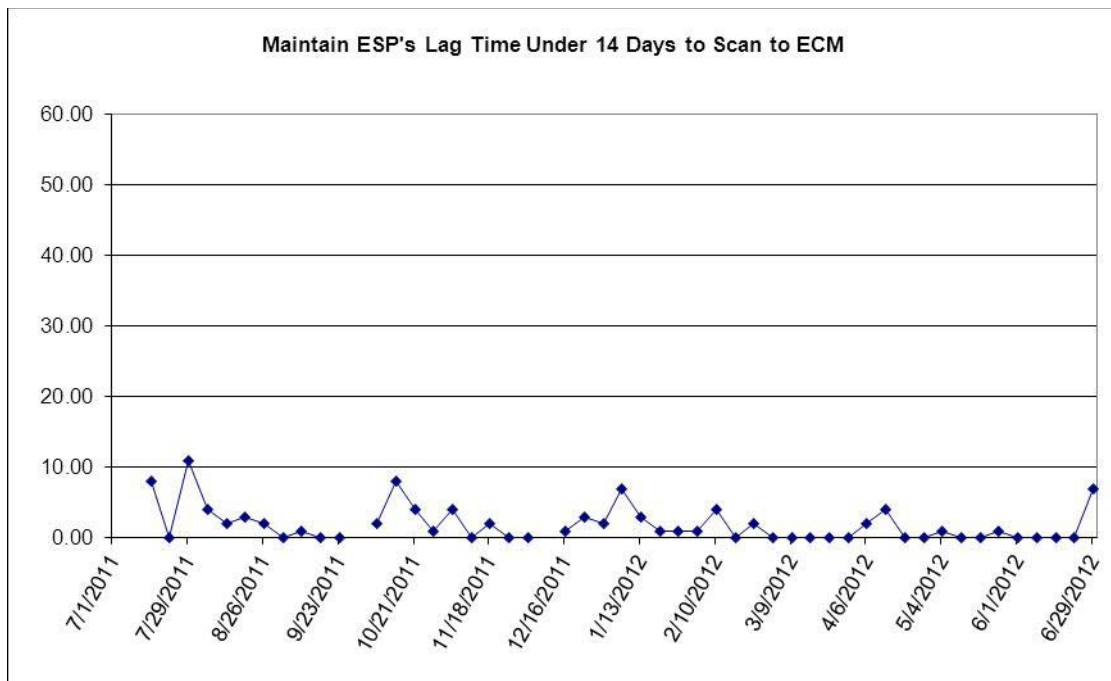


Fiscal 2012 Expense and Equipment Expenditures	
Administration	\$ 46,682.91
Air Quality Assurance	\$ 17,148.10
Air Quality Monitoring	\$530,899.82
Chemical Analysis Section	\$470,676.20
Environmental Emergency Response	\$516,764.98
Field Services Unit	\$ 61,608.04
Water Quality Monitoring	\$193,881.35
Total	\$1,837,661.40



Administrative Unit Performance Measures





Environmental Services Program Fleet Management

The Administrative Unit maintains a fleet of 34 vehicles used by program staff to complete their mission. In fiscal 2012, field staff drove 414,927 miles in the course of doing their work. There were seven vehicular mishaps out of the 2,055 trips.

The program's fleet consists of five dedicated Emergency Response pickups, six fully equipped emergency response vehicles, sixteen pickups, two SUVs, one sedan, two minivans, and four specialty vehicles. In fiscal 2012, six of the program's vehicles were replaced; four due to high mileage, one due to mechanical problems, and one that was totaled in an accident.

The fleet also includes six boats; a Munson Landing craft for emergency responses, three Jon boats for emergency responses, an electrofishing boat for specimen sampling, and a jet boat useful for accessing shallow waterways.

In fiscal 2012, the program purchased a 2006 Coachman travel trailer from the State Agency for Surplus Property. The trailer has been converted into an Emergency Response Command Post which will be deployed to disaster areas in the state where an extended department deployment is needed.

Portions of the interior were removed to allow for storage. Work stations were constructed along with installation of phone, electrical, satellite, and communication systems.





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